



A MONTHLY JOURNAL DEVOTED TO THE ELEVATOR AND GRAIN INTERESTS.

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OAT CLIPPING.

It is not usual at this late date to find grain handlers who doubt that oat clipping is profitable and daily growing in favor with the trade. Any doubting grain dealer who will try the experiment of sending to the same market on the same day test cars of the same grade of oats—say one car not clipped, and the other clipped by a first-class oat clipping machine will convince himself quickly that there is extra margin for him on every bushel clipped that he can not realize in any other way. There are plenty of "living examples" of this, not only in the city of Chicago but other large grain centers, and in almost any country grain center where the trade is sufficient to demand steam elevators. Many of the cleaning houses of Chicago are using the "Excelsior" Oat Clipping Machines, and many more of them are being put in here this season. Wherever one of these machines is located the user of same will be found a warm friend of the machine and the factory making them. A list of such places will be gladly furnished by the makers to parties desiring to investigate, and in most locations the inquirer can have ample opportunity to place the "Excelsior" machines in direct comparison, at work, alongside of almost every kind of clipper made.

The object in clipping is to remove the bearded end, take out superfluous hulls, reduce the amount of space required for storage in bins or for transportation in cars or vessels, or in other words to enable the handler to store or ship a larger weight of oats in a given space. A bin, car, or vessel will hold fully a quarter more clipped oats than of the unclipped. This is an item of no small importance to the country shipper when cars are scarce, or to the cleaning house or storage elevators of large cities, or to the exporter of oats. It is due to this that clipped oats for export command fancy prices. Additional to this feature are the other and equally important ones that clipping machines likewise polish and clean the grain so as to raise the grade. Our readers are too familiar with the comparative prices of different grades of grain to need explanations of this advantage.

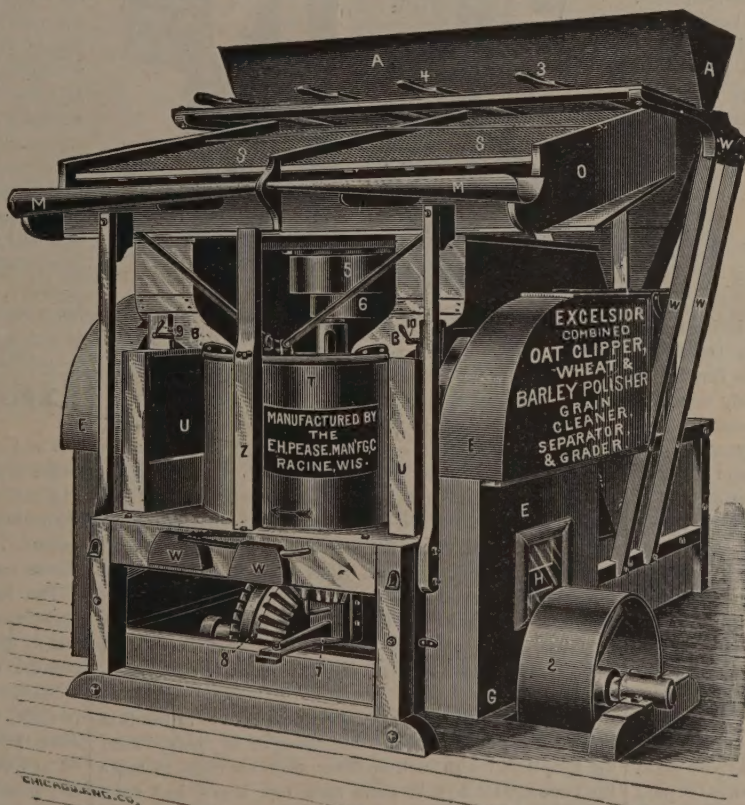
Then, too, the clipping operation will dry out damp and heated oats, take out "weevil," if there be any in the grain, and remove mildew and must. The gross percentage of that termed "shrinkage" by clipping should not exceed on an average over 750 pounds to the 1,000 bushels. If the grain be of good grade it will be less than this amount, or if it be a poor grade of very light

oats, the shrinkage may be somewhat increased, but in no event should it exceed 1,000 pounds to 1,000 bushels no matter how poor the unclipped stock, nor will it exceed this amount by the use of the "Excelsior" Machines if properly operated. The net shrinkage may be reduced much less than stated by the owner of an "Excelsior" Clipping Machine, because the machine is so constructed that all light oats and hulls can be separated from the fine dust and also from each other. Thus the light oats can be marketed by themselves for what they are worth,

raised from two to three pounds to the measured bushel, contingent somewhat on the condition of the stock which is being clipped, and likewise the lower grades of oats can be raised to the next higher grades, and the highest grade oats can be given a fancy finish, and will command a fancy price.

The light, chaffy, barbed end of the oat is the part removed, consequently the shrinkage in weight is but little more than if cleaned in a separator. When these light ends of the oats are removed, which tend to make them lie fluffy in the car, bin, or vessel, the grain will pack nearly as close as wheat. The amount of shrinkage in clipping depends upon the closeness of the clipping and the amount of light oats and dirt removed. This is wholly under the control of the operator, who can, with the "Excelsior" Machines, regulate same and also the weight per measured bushel of the clipped oats, to suit himself, when the machine is in motion at full speed.

We illustrate herewith two different styles of these machines made by the E. H. Pease Manufacturing Company of Racine, Wis., who also make other styles and make two or three sizes of each style, to suit the space in which the machine can be located, the range of work it is desired to do in the machine, the amount of power at disposal of the machine, or price the purchaser wants to pay. The makers represent that they can meet the price of almost any other clipper made with an "Excelsior" Machine of corresponding capacity and range of work, but ask dealers to take into account that some of the styles of the "Excelsior" Machines cover a range of work besides that of oat clipping and thus enable the buyer to handle a variety of work that almost any grain dealer ordinarily keeps three or four different kinds of machines in his warehouse to accomplish. The lettering on the sides of the two cuts given here indicates the range of work each of the two styles of machines shown are adapted to do, and the company make yet another



THE EXCELSIOR COMBINED CLIPPER.

or (either alone, or mixed with the "hulls") can be ground up with corn into "ground feed," for which there is a ready market in every city and town.

By a proper manipulation of the Excelsior Oat Clipping Machines, the operator can do as he wishes about utilizing the light oats and hulls out of the gross shrinkage, thus reducing the net shrinkage to only the fine dust blown out at the suction fan, or if he prefers can deliver everything of the nature of waste out through the dust fan, simply saving all the sound grain.

By the clipping process the weight of oats can be

style that covers only the same range as other clippers.

Particular attention is called to the Excelsior Combined Clipper. The makers claim that it is the only machine of its kind in the world, and it is the style that is particularly popular with the larger country grain handlers and with the larger cleaning and storage houses of large cities. It combines four machines in one, viz.: A perfect dustless elevator receiving separator, a grain separator and grader, a dustless oat clipper, separator and grader, or a dustless wheat or barley polisher, separator and grader. As to the first two mentioned uses it is said

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to be adapted to handling any kind of grain and stands without a superior in the market for these purposes. As to the two last mentioned uses its superior merits are too well known to need comment here.

A special feature worthy of note concerning the "Excelsior" Machine is that its makers claim it to be the only clipping machine on the market so arranged that when running at full speed and at work, the operator can at will change the adjustment so as to raise the weight or grade of the finished oats to any given standard desired within reasonable limits. This is a great advantage to the shipper of clipped oats, for many times his orders for shipments are such that he wants to ship clipped oats of different standards of grade and weight on the same day. By this means he can draw oats from the same bin and clip out a car of one grade and weight, then without stopping the machine, clip out the next car of a different grade and weight, and the machine can be kept running right along and clip out a good part of a carload during the time it would require to stop and make the necessary alterations to change the standard of the clipped oats.

With the opening of this season's business "Excelsior" Machines seem to be more popular than ever with the trade. The company have made some improvements in the line of durability of those parts particularly exposed to wear. Many of these machines have been running almost constantly upward of seven years in the largest cleaning houses of Chicago with but small percentage of cost for repairs, which fact is a convincing testimony to their durability.

Among the more important sales of "Excelsior" Clippers that have been made during the past ten days may be mentioned one for the new Diamond Elevator of Minneapolis, Minn., two to Leet & Fritz of Chicago, who have been running two of the same size and style from five to seven years; one to Counselman & Co., being the second "Excelsior" Clipper bought by them within a year; one to the Plymouth Roller Mills of Le Mars, Ia., two to the Amana Society of Amana and South Amana, Ia.; one to Stewart & Moeller, Reinbeck, Ia., and many others.

The company issues a descriptive catalogue of these machines and a large variety of other machines, supplies, fittings, etc., for grain elevators, which it handles and manufactures. This catalogue ought to be in the hands of all our readers, and they will take pleasure in mailing it on application, and in answering promptly all correspondence pertaining to any kind of machinery, fittings or supplies wanted for the building, equipping, or repairing of elevators. Address the E. H. Pease Manufacturing Company, Racine, Wis.

BRITISH AGRICULTURE AND AMERICAN PRODUCTS.

A recent interesting report on British agriculture, by our able and active consular representative at Dunfermline, Scotland, Mr. Reid, revives the subject of England's dependence upon other countries, and especially upon the United States, for a large portion of the breadstuffs and provisions which she requires. Year after year, in this line, British wants are becoming greater, and British products less. The reduction in British agriculture is principally in acreage under plow, the farmers being driven from the plow to "grass and greens," as an English paper aptly terms it—"greens," meaning green crops, such as vegetables, etc., wherein foreign competition is less severe. Mr. Reid furnishes the official figures of the increase and decrease. In 1870 the land under plow amounted to 18,335,000 acres, in 1890 to 16,751,030, a decrease of 1,584,000 acres. On the other hand, pasture has increased from 12,073,000 acres in 1870 to 16,017,000 in 1890, an increase of nearly 4,000,000 acres.

Considering now the results flowing from these great changes, we find that in 1889 the British imports of food and food products, including live animals, dairy products, cereals, breadstuffs, fruit, lard, meats, vegetables, rice, sugar, nuts, pickles, etc., amounted to \$655,291,000 in value, and that of this sum the United States' share was \$200,874,000, or nearly one-third. A further examination of the figures shows that of the great staples, such as wheat, corn, flour, lard, beef, bacon, ham, etc., the United States furnished about 60 per cent. to the mother country.

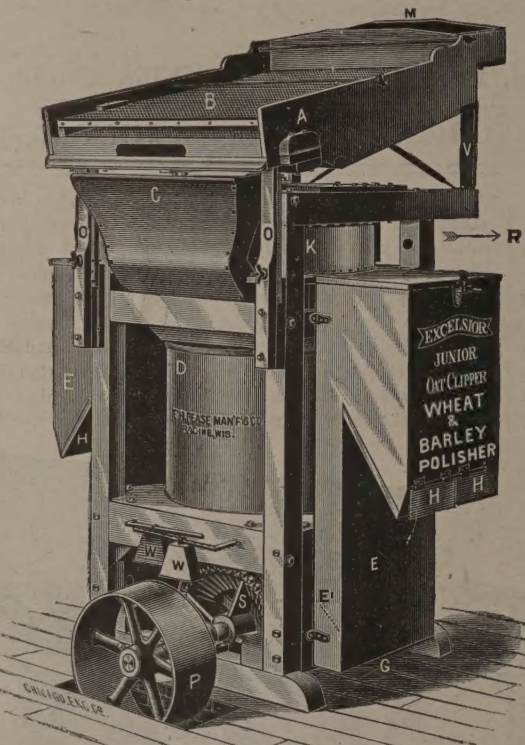
Good weather and an increased acreage have combined to make the wheat crop of Oregon and Washington heavier than last year.

MEETING OF THE ILLINOIS GRAIN MERCHANTS' PROTECTIVE SOCIETY.

The sixth annual meeting of the Illinois Grain Merchants' Protective Society was held at Springfield Tuesday, June 2. The meeting was called to order by S. K. Marston, secretary. H. C. Mowrey of Forsythe, was elected chairman pro tem, and F. A. Baner, temporary secretary.

S. K. Marston read the record of the last meeting, which was approved. He also read a record of his doings, and of meetings of the executive committee. The action of said committee and of the secretary were fully approved.

Motion was made by F. M. Pratt, seconded by Baxter, that a committee on revenue be appointed, but after due consideration it was decided to take it up in committee of the whole. Moved by Pratt that the price of membership stock be fixed at \$25 per share, with annual dues at five cents for each car shipped. Substitute offered by Mr. McFadden that a committee of five be appointed to amend article of constitution in regard to fees and dues. The substitute was adopted, and Messrs. McFadden, Pratt,



EXCELSIOR JUNIOR OAT CLIPPER, WHEAT AND BARLEY POLISHER.

Coon, Norton and Newbegin were appointed said committee, who reported as follows:

Each member shall take one share of stock for each station where he shall buy grain, and shall be entitled to one vote for each share of stock he holds. That the value of such membership stock shall be \$5 per share, and the annual fees shall be fixed at five cents for each car of grain shipped by them. That the basis of said assessment shall be the number of cars of all kinds of grain shipped the preceding year, and said fees shall be paid quarterly in advance. Provided that members who are receivers at terminal points and not dealers at local stations, shall pay \$10 per annum for each city in which they do a receiving business.

On motion of Mr. Savage, the word "shall" in the first line of the above resolution was changed to "may," leaving it optional with each member who operates at more than one station to take more than one share, but such member shall be entitled to but one vote for each share he may hold. The resolution as amended was adopted, and article 11 of the constitution to be changed in accordance therewith.

A committee was appointed consisting of Marston, McFadden and Beggs, to draft resolutions on the death of President Isaac Van Ordstrand, also a committee to draft resolutions on recent change of rules of inspection as adopted by the Board of Railroad and Warehouse Commissioners, consisting of Ulrich, Newbegin, Pratt and Baxter. Adjourned till 7:30 P. M.

At the evening session the following resolution was presented and adopted:

WHEREAS, It has pleased the Great Ruler of the Universe to remove from our midst our honored and beloved president, Hon. Isaac Van Ordstrand, one of the oldest grain merchants in the state, whose reputation has stood untarnished in all the relations of life for half a century, therefore

Resolved, That this society has lost one of its staunchest supporters and most genial members.

We shall meet, but we shall miss him, There will be one vacant chair.

Resolved, That we extend our heartfelt sympathy to the bereaved family, realizing that while we have lost one of our most faithful, energetic and generous members, and that our loss is almost irreparable, theirs is unspeakably greater.

Resolved, That these resolutions be spread on the records of the society, and a copy furnished the family of our deceased friend and brother.

The following resolution regarding grades was then adopted:

Resolved, That, in the opinion of this society, the Railroad and Warehouse Commissioners, in their recent change of rule 7 of inspection, have struck a severe blow at the interests of the farmers and merchants of the great West, as, under these rules, it will be impossible to have corn pass contract grade before June delivery each year, thus compelling farmers and country merchants to hold their corn until it is assessed for taxes, or sell it as new corn at probably several cents per bushel less than contract corn. The commissioners, instead of relieving the farmers by a more liberal construction of rules now construed in the most rigid manner, have placed an additional burden upon an overburdened class, and put it in the power of a few unprincipled speculators to manipulate the markets more easily than ever before. We recommend a unanimous protest from the producers and merchants of the West, and that they insist on a correction of the same. And be it further

Resolved, That the word "new" be stricken out of the grade of No. 2 winter wheat, as the bulk of the crop is marketed in July, August and September, and the word "new," as applied to wheat, will result in the same injury to producers and country shippers as the same word applied to corn in the previous resolution, and the secretary is instructed to send copies of the above to the grain associations of the Western states.

The following officers were elected: H. C. Mowrey of Forsythe, president; Edwin Beggs of Ashland, vice-president; S. K. Marston of Onarga, secretary and manager; E. R. Ulrich, Jr., of Springfield, treasurer; E. F. Norton of Tallula, executive committee; W. B. Newbegin of Blue Mound, committee on claims.

In the discussion in connection with the election of officers, Mr. Marston declined a re-election on the ground that he was physically unable to perform the necessary labor connected with the office, and stating that the society had suffered on account of his having failed to perform such labor. It was resolved that the executive committee be directed to secure a suitable assistant, and several names were mentioned as possible candidates, Mr. Marston consenting to serve under such condition. The necessity of having an active man constantly in the field was conceded, and the members present were unanimous in adopting a plan whereby abundant funds can be secured to thoroughly work up the interests of the society. The plan adopted is considered eminently just and equitable, as the largest shippers would be most benefited, and would pay proportionately. Firms who ship 2,000 to 3,000 cars annually cheerfully consented, while those who ship from 50 to 100 cars felt that they were justly dealt with, and it is believed that ample funds will thus be secured.

EXPORTS AND IMPORTS OF HOPS.

The United States exported in May 144,488 pounds of hops, valued at \$48,141, against 69,346 pounds, valued at \$12,292, in May last year, and in the eleven months preceding June 8,634,052 pounds, valued at \$3,296,241, against 7,433,856 pounds, valued at \$1,088,627, in the eleven months up to June, 1890.

The imports of hops for May amounted to 135,957 pounds, valued at \$49,764, against 213,013 pounds, valued at \$37,822, for May last year; and for the eleven months up to June the imports of hops amounted to 3,965,029 pounds, valued at \$1,772,188, against 6,377,291 pounds, valued at \$1,024,712, for the eleven months up to June, 1890. Of foreign hops the exports in May amounted to 9,614 bushels, valued at \$3,730, against 37,651 bushels, valued at \$4,647, in May last year, and in the eleven months up to June we exported 209,424 bushels, valued at \$52,964, against 402,936 bushels, valued at \$61,352, in the corresponding period of 1889-90.

The wheat steal investigators will have to quit before long, as they have the \$10,000 appropriation pretty nearly used up. A roaring farce at state expense.—*Tribune, Granite Falls, Minn.*

The greatest development in wheat culture may reasonably be expected to occur in Texas, Washington, Oregon and Kansas. Wheat is now a profitable crop, and Texas cotton growers may turn their attention to wheat, as the cotton markets are depressed by overproduction.

NEW ORLEANS A FOREIGN RICE MARKET.

The New Orleans *Picayune* says that "during the past decade New Orleans has become the leading rice market of the United States, as far as the marketing of the domestic rice crop is concerned. This has been the natural result of the development of the rice industry in Louisiana, this state now producing considerably more than half of all the rice made in the country. The entire rice crop of Louisiana is marketed in New Orleans, hence this market controls the largest supply of domestic rice of any of the points handling the product.

"Although the size of the domestic rice crop has been greatly increased during the past ten or twelve years, and although it is to be hoped that the country will eventually produce all the rice it consumes, as there is hardly more than sufficient area suitable for rice culture, there is nevertheless a large amount of foreign rice also consumed. All, or nearly all, this foreign rice goes to New York, from which point it is distributed to all portions of the country.

"A good portion of this foreign rice imported into this country comes in what is known as the unclean state or merely hulled, but not polished or removed from the flour and other impurities. This unclean rice is brushed and cleaned by mills in New York used expressly and solely for that purpose, the importers realizing thereby a good profit owing to the difference in the duty between clean rice and the so-called unclean article.

"It has on more than one occasion been pointed out that New Orleans, being equipped with the best rice mills in the country used for preparing domestic rice for market, could as profitably handle foreign rice as New York. As the tariff duty protects the domestic product from the competition of foreign rice, it would, of course, only pay to import foreign after the bulk of the home crop is disposed of, but as that generally occurs at a comparatively early date, there would be ample time to devote to the handling of the foreign product.

"The importing of foreign rice at New Orleans would retain the custom of rice consumers the year round, as they would not be then under the necessity, as at present, of going to New York for rice as soon as stocks of domestic run low in New Orleans. With the control of the foreign rice trade this market would be the better able to regulate the price of the domestic product and draw more buyers here.

"This city has all the facilities for handling foreign rice possessed by New York, having even better mills and more of them, while ocean freight rates are probably as cheap to this port as to the Eastern metropolis. Despite these manifest advantages and facilities, there has existed hitherto a disinclination to mingle the trade in domestic rice with that in foreign goods.

"There has arrived in the river during the past few days a solid cargo of Japan rice direct from the land of the Mikado. This rice comes consigned to New Orleans merchants and will be brushed and polished by one of the local mills, as well as distributed from this market.

"The result of this experiment will doubtless be watched with interest, and if it proves successful and nets a profit to those who have embarked in the

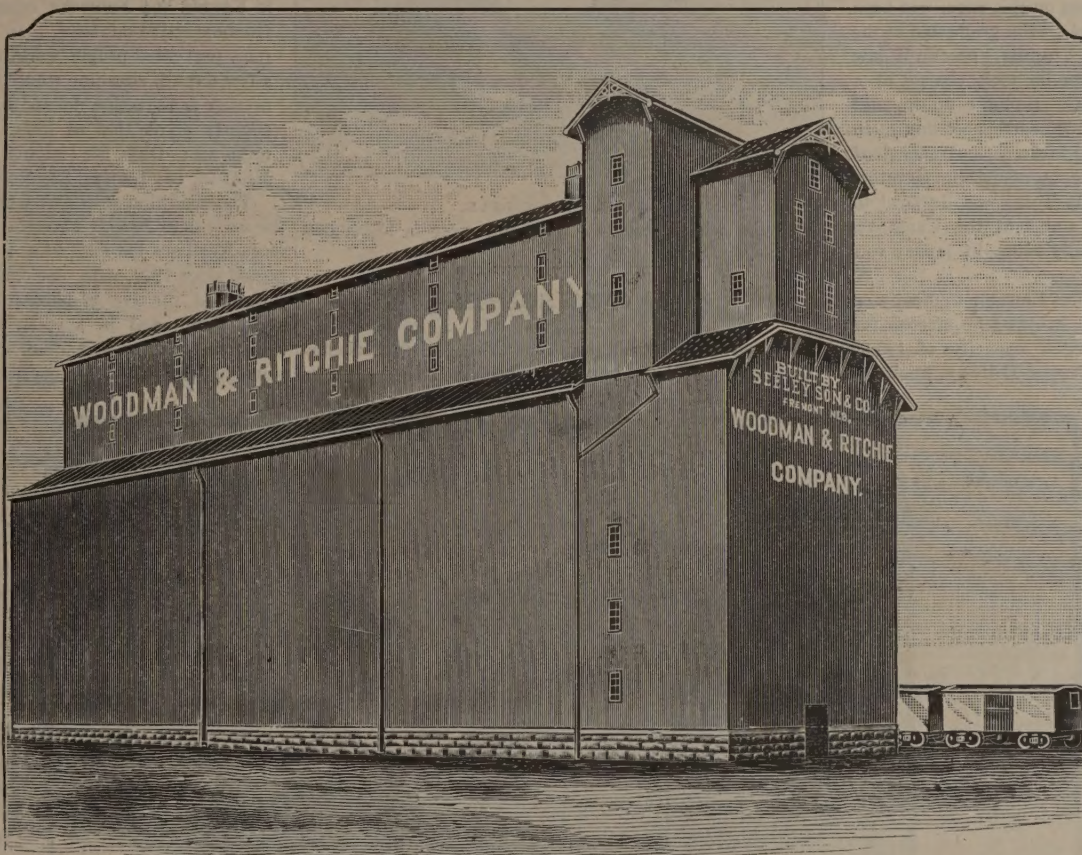
enterprise, the importation of foreign rice will probably become a permanent branch of the rice interests of this city."

A LARGE FLAXSEED ELEVATOR.

The large and constantly increasing business of the Woodman Linseed Oil Works at Omaha, Neb., made a demand for more storage capacity and in May, 1890, they contracted with Seeley, Son & Co., architects and elevator builders of Fremont, Neb., for a 1,000,000 storage elevator shown in the illustration given herewith.

This elevator was built under a time contract and was completed in ninety days. It is 240 feet long, 50 feet wide and 126 feet high, and is used for the storage of flaxseed in connection with the oil mill adjoining.

It is fitted with the latest improved elevator machinery such as steam shovels, belt conveyors, car puller, etc., and is driven by rope transmission. The power is taken from the Corliss Engines of the oil mill. By the use of friction clutches any elevator, conveyor or machine can be operated alone and independent of the others. The ar-



NEW FLAX SEED ELEVATOR AT OMAHA, NEB.

range of the house is complete in every way and the owners are more than pleased with it.

Seeley, Son & Co. make a specialty of time contracts and are the patentees of a number of very useful parts of the machinery of a first-class elevator.

"OLD HUTCH'S" SON.

They say that in his secret heart "Old Hutch" idolizes his thrifty and respected son Charles, although professing objections to his art and mission and social interests. It was soon after Charles was first established in business (so goes the Chicago story) that Isaac came to his father and said: "Dad, I think you ought to do something for me, too." The old man looked him over. "You're right, Ike," said he, "and when I come back from the farm I'll have thought it over and I'll tell you what I make up my mind to do for you. You come down to the Board of Trade at such and such a time." So Isaac presented himself to his parent at the appointed time, and said he, "Well, father, have you made up your mind what you're going to do for me?" "Yes, Ike,"—and there was a gleam in the eyes of the parent—"yes, Ike; I've made up my mind to get you a Waterbury watch."

Send us news of your district of interest to the readers of the AMERICAN ELEVATOR AND GRAIN TRADE.

TWO WHEAT PLUNGERS.

Hutchinson, it is generally conceded, says the *Chicago Herald*, plunged in wheat as nobody else ever did. After Hutchinson, however, as everybody in the trade will concede, came Charles Rouse. There was this difference—Hutchinson lasted thirty years, Rouse about ten. Rouse died at New York at the age of 41, his estate a very small one. Hutchinson is supposed to be a partly demented person, with no assets worth speaking about. There is one difference between Rouse and Hutchinson. The latter always did the bulk of his own trading, and was never lavish with commissions. Rouse, on the other hand, made a half dozen commission men rich—some of them very rich. One day he was out here on a trip, and to make expenses scalped 1,600,000 bushels of wheat through C. A. Mair. Mair said: "Can't you see that you are making your commission men rich, and that it is a charge that will eat you up?" Rouse replied: "I am making money, and I don't care how much my commission men make."

Rouse made his fortune in the grain market before he was 35 years old. During the last eight years he has been slowly losing it. He started in Baltimore. He in-

herited a small fortune, but it was lost in the grocery business. His first successful experience in the grain trade was with C. A. Mair. For a time he represented the Chicago man at Baltimore, and built up an enormous commission business among the exporters of that city. Rouse's personal trades soon amounted to more than his commission business. Meeting with great success, he abandoned the commissions and devoted himself to speculation. So long as he stayed at Baltimore his fortune grew.

He thought Baltimore too small a place, however, and moved to New York. There his success began to leave him. He fell into the common error of overtrading. At one time he had bought for a single month's delivery at New York 10,000,000 bushels of wheat. He met with a serious loss in the Harper wheat deal. He had a big "spread" between here

and New York—3,000,000 sold here and 3,000,000 bought at the seaboard. He lost over night on that spread, while on his way from New York to Chicago, \$60,000.

Rouse was always regarded by the trade as a speculator of singularly high principle. The trade trusted him as few enormous speculators have been trusted. It was his custom at night each day to hand his trades in the different markets to Milmine-Bodman. That concern had such confidence in him that it gave him carte blanche.

Before he ever became a grain speculator Rouse was compelled to settle with his creditors in the grocery business at 50 cents on the dollar. After he met with this success in speculation his old creditors received a check for the 50 per cent. and interest on their old claims. So large was Rouse's business with Mair between 1881 and 1884 that the Baltimore & Ohio Telegraph Company kept a wire between Chicago and Baltimore clear for him.

Rouse's reputation was so great that Phil Armour, when largely interested in the market one year, went down to Baltimore to discuss the situation with Rouse. The Baltimorean did not agree with Mr. Armour. The two men followed their individual views, and Rouse made the money that year.

There is no bounty for English sparrows killed in Illinois at this season of the year, but only for those killed in the months of December, January and February.

PUBLIC ELEVATORS IN TEXAS.

Texas is the largest state in the Union, but does not produce grain in proportion to its size as compared with some of the other states. Last year it produced 3,575,000 bushels of wheat, 63,802,000 bushels of corn, and 11,059,000 bushels of oats, against 6,189,000 of wheat, 83,698,000 of corn and 14,808,000 of oats for the preceding year. However, the acreage is continually increasing, and the time is not far distant when Texas will have grain to ship out.

Although not a great grain producing state, Texas has public elevators, and one of large capacity. These elevators are operated by the Dallas Elevator Company of Dallas, where the company's largest elevator is situated. This elevator, which is illustrated herewith, has a storage capacity for 1,000,000 bushels. Grain is stored for a reasonable compensation, and money is advanced on elevator receipts at the current rate of interest. Grain is bought and sold, and information given without charge. All grain is inspected and weighed under supervision of the Merchants' Exchange, if desired, and receipts are issued on weights and classification at elevator.

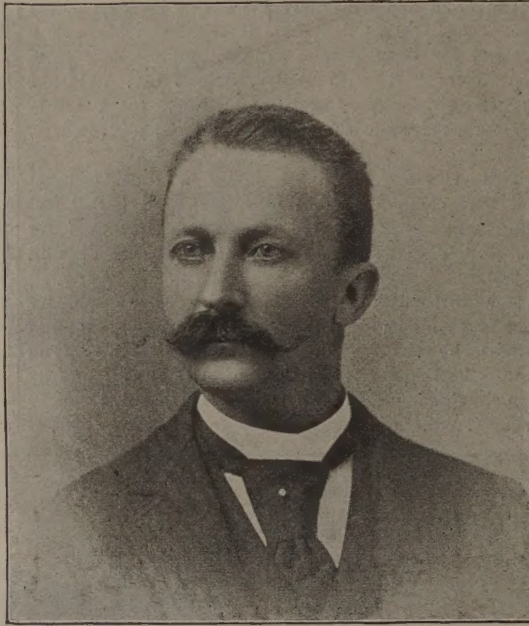
The president of the Dallas Elevator Company, F. M. Cockrell, a cut of whom is given on this page, was born in Dallas, Tex., Aug. 29, 1854. He graduated at the Washington-Lee University, Virginia, practiced law from 1879 to 1881, at which time he took charge of a 75-barrel flour mill at Dallas. He built up this mill and increased its capacity to 600 barrels per day. In 1888 he went out of the milling business and conceived the idea of establishing a system of public elevators through the state, believing that Texas was destined to be one of the greatest cereal states of the Union, that her cereal crop would eventually equal in money value her cotton crop.

In 1889 he organized the Dallas Elevator Company and erected an elevator at Dallas. In 1890 he erected four additional elevators of an aggregate capacity of 180,000 bushels, on the Ft. Worth & Denver Railway, known as the Pan Handle country of Texas. These are the first and only public elevators in the state. He found it necessary in order to educate the people to handling through elevators, and to demonstrate to the agricultural element that public elevators were a benefit to the country, to organize a grain company, which he did and incorporated under name of Cockrell Grain and Commission Company, of which he is president.

In April, 1891, he was solicited by the stockholders of the Todd Milling Company, with a capacity of 650 barrels per day, to take the presiding and financial management of their affairs, which he reluctantly accepted. He now holds the important positions of president and financial manager of Dallas Elevator Company, Todd Milling Company and Cockrell Grain and Commission Company, all different and separate corporations, he being the only one holding stock in each.

The elevators are worked on the same plan as public elevators in St. Louis, Chicago and Minneapolis, and handle grain only for the storage that there is in it, while the grain company purchases and sells. The elevators were built by Metcalf-McDonald Company of Chicago, and are of the latest and most improved style. The Dallas house has a handling capacity of 25,000 bushels per hour, and ample cleaning capacity; the smaller houses having a corresponding

handling and cleaning capacity. Since the erection of these houses (until this year) the crops have been exceedingly poor, but they have handled about 1,000,000 bushels annually, and prospects are this year that they will handle three to four million bushels. The



MR. F. M. COCKRELL.

estimated wheat crop of Texas this year is 15,000,000 bushels.

A NOVEL SCHEME.

The industrious grain dealer is working a novel scheme whereby a relatively high price is received for low grade

GOVERNMENT CROP REPORT FOR JULY.

The July report of the Department of Agriculture makes the acreage, as compared with breadth, harvested last year of corn, 108.3; potatoes, 102.3. Condition of corn, 22.8; winter wheat, 97.2; spring wheat, 84.1; rye, 93.9; oats, 87.6; barley, 90.9; potatoes, 95.3. The heavy increase in corn acreage is more apparent than real. The comparison is with the breadth harvested last year, when there was a loss of 6,000,000 acres by abandonment on account of drouth. The present return makes the acreage slightly less than 78,000,000 acres, or somewhat smaller than the area actually planted last year. Kansas and Nebraska naturally show a large increase, but their area apparently does not exceed that harvested in 1889. A further and more minute investigation will be made in the districts which suffered most from drouth last year. The crop is late in all sections on account of drouth and unfavorable conditions at time of planting and cool weather during May. But June was warm, with abundant moisture, and the crop is coming forward rapidly. July 1 in the Ohio and Upper Mississippi Valleys the progress during the month was especially gratifying; but in Kansas and Nebraska considerable damage resulted from excessive rainfalls. In many districts the June rains prevented proper working, leaving fields foul, but a few days of sunshine would remedy this. The general average is a fraction below that of 1888 and 1890 and slightly above that of 1889. The average of surplus states are: Ohio, 93; Indiana, 95; Illinois, 96; Iowa, 94; Missouri, 88; Kansas, 82; Nebraska, 90.

The condition of winter wheat is returned practically the same as in June. The crop is harvested except in its more Northern habitat, with a condition the highest reported since 1879, with one exception. So far as can be judged at the time of harvest the berry is reported generally plump and in keeping with the heavy straw, but occasional mention is made of short heads. Averages of principal states are: Pennsylvania, 98; Ohio, 97; Michigan, 89; Indiana, 99; Illinois, 98; Missouri, 98; Kansas, 94; California, 98.

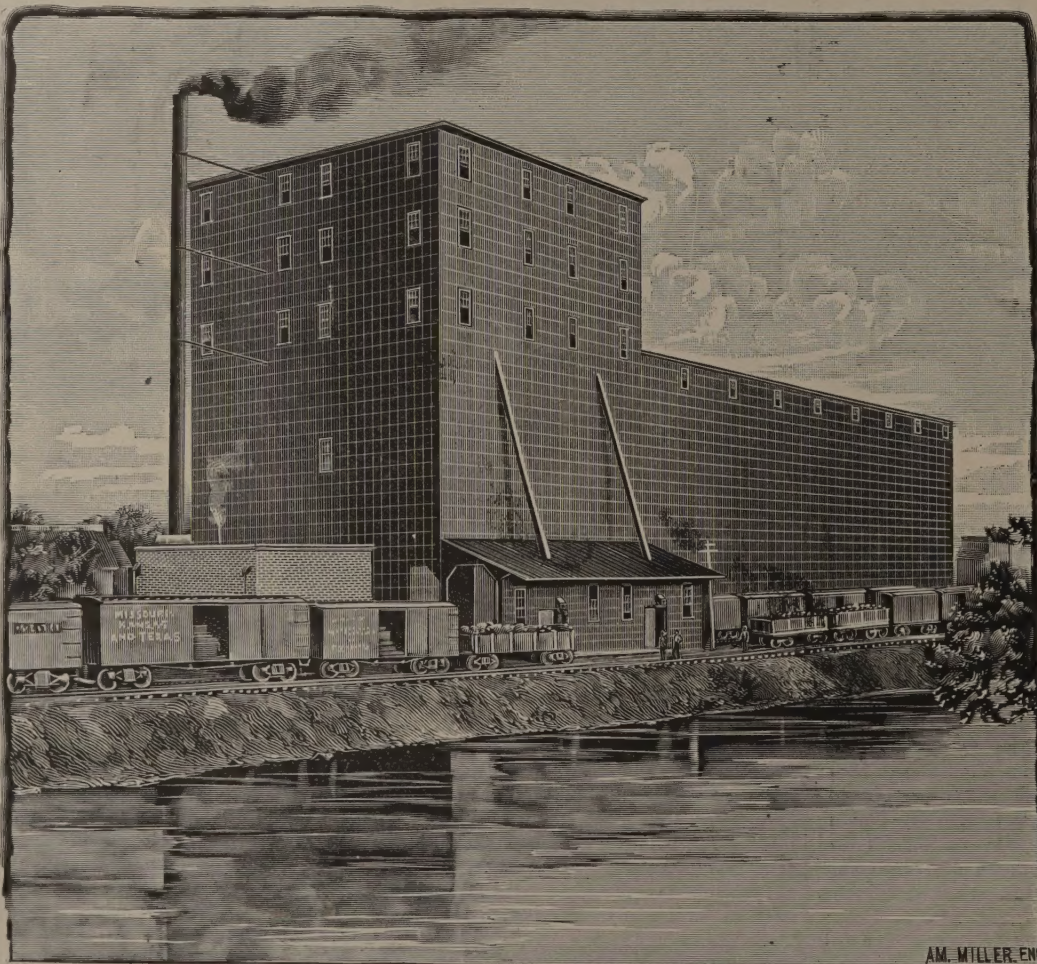
The condition of spring wheat improved during June, the advance being in Minnesota and the Dakotas, where the month was exceptionally favorable. Chinch bugs have appeared in portions of the Northwest, but with no appreciable damage yet. State averages are: Wisconsin, 77; Minnesota, 93; Iowa, 96; Nebraska, 96; North Dakota, 98; South Dakota, 97; Washington, 98.

Oats have improved during the month, but the general average is the lowest reported since 1879, except in 1887 and last year, when a July condition of 81.6 was followed by a practical failure of the crop. The poor condition is generally the result of drouth early in the season, the present improvement having followed the seasonable rains and high temperature of June.

The first return of potatoes shows condition higher than the average of recent years, while that of tobacco is higher than in any year since 1886. A special cable from the

European agent indicates a heavy deficiency in the European rye crop.

Some wheat in private Minneapolis elevators has been transferred to public houses. It is supposed that this was done in order to get the wheat where it could be delivered on July contracts.



1,000,000-BUSHEL ELEVATOR AT DALLAS, TEXAS.

barley. This is worth something like 1 cent per pound on the market, or around 60 to 62 cents per bushel, while oats are selling at 1½ cents per pound or better. A quantity of cheap barley mixed carefully with a much larger quantity of oats, and upon its arrival sells as oats, hence the barley whose identity is thus lost, commands the oat price on the 32-pound basis.—Cincinnati Price Current.

AM. MILLER, ENG.

WEBER GAS AND GASOLINE ENGINE.

A strong, well-built, economical, reliable and clean gas engine that will run as well on gasoline, has long been needed. This long felt want has been supplied in the "Weber Gas and Gasoline Engine," manufactured by the Lloyd Foundry and Machine Works, Kansas City, Mo. In the engine shown in the accompanying cut, many new and important features have been introduced, both in construction and in operation, and the makers claim to have the simplest, most compact and economical gas and gasoline engine on the market.

The cost of operating the engine on 74 degrees gasoline is said to be about 1 cent per hour per horse power. The tank supplying the gasoline is generally placed outside of the building, and is connected direct to the engine, under perfect control of the governor, allowing only as much gasoline to enter the generator as is needed by the load on the engine. The cost of operating the engine on gas is not more than any other gas engine on the market, and in many instances is considerably lower. The amount of water consumed in this engine is really not worth mentioning, as it requires only about four or five pailfuls of water per day of ten hours for a 10-horse power engine.

A glance at the cut will show the extreme simplicity of this engine. It has been the aim of the manufacturers to place an engine on the market that is strong, reliable and economical, and of most simple construction, in fact, an engine that can be used anywhere, by anyone, and under all circumstances. An engine of this kind, automatic in all of its workings, is what is claimed for the "Weber."

The engine is of the self-contained type, the cylinder and bed is of one strong and symmetrical casting, attached to a sub-base of neat design. This insures perfect alignment of all the working parts, thereby reducing friction to a minimum. The bearings are all exceptionally large and heavy, the crank shaft is of forged steel, all valves are direct acting poppet valves, lifting squarely from their seats, and requiring no lubrication or cleaning. The valve-gear and governor is encased in an iron housing and runs constantly in oil, keeping the main working parts of the engine free from dust and grit and always well lubricated, and requires no attention other than filling the oil reservoir.

This engine is used for running elevators, bakers' machinery, etc., in fact, for any use at which an engine can be put to. They are built both horizontal and vertical, the smaller sizes being of the vertical type. For those who require a clean and noiseless engine, at the same time cheap and economical, an engine to which no expense is attached until in actual operation and which expense ceases immediately after the engine is stopped, requiring no attention other than filling oil cups and cleaning bright parts, doing away with boilers, coal, ashes, water service, extra insurance and other like nuisance, the "Weber" Gas and Gasoline Engine stands pre-eminent.

STORAGE BY PRODUCERS.

Organized efforts to hold grain where it can be used to borrow money on, and not be at too high cost for interest and storage, is to move in a doubtful direction. One trouble with the movement is that it is headed by irresponsible people who for place or profit urge upon the attention of farmers the hope of large reward by adopting that course. If they will take the trouble to look through the past they will find large profit to the owner of grain rarely occurs by holding it in store for the rise in price to pay more than interest, insurance and storage. The practice would cost not less than $1\frac{1}{2}$ cents a bushel for a month, or at the rate of about 18 cents a year. The price does not average 18 cents higher at the end of the year than at the beginning. Still it would be helpful in many respects. The railroads would be benefited by having the haul extended through the year, and so would grain dealers. The thought might as well be dismissed that dealers, railroads or general business would be in any manner crippled if the project would be successful. There is sure gain to them. Farmers would be the speculators. That they can establish a financial success by the project is not only doubtful, but is, as they will learn at last, simply hopeless. To expect to control the market by it shows a want of knowledge of the subject.—*Minneapolis Record.*

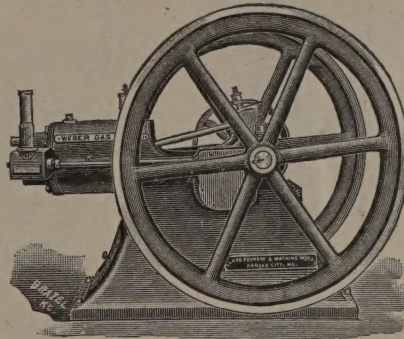
POINTERS FOR PROSPECTIVE BUILDERS.

BY R. JAMES ABERNATHEY.

Prospective builders of elevators are often puzzled as to what kind of a house to build, the question of cost being, as a rule, the disturbing factor. A good building is desired, but then we want to make it as cheap as possible, is the mental conclusion; but just how to do that is the question. Will we crib or will we make it a light shell?

The general supposition is that cribbed houses cost a great deal more money than frame, and so they do cost rather more than a very light shell frame; but scarcely more than a good, substantial frame that is well supported and tied together, and they may not be very much more valuable than the latter. Both may be regarded permanent buildings; good for a fair return on the investment barring destruction by fire or otherwise. Such risks, however, have to be taken with all classes of buildings, cheap and enduring alike.

When a substantial and enduring building is desired it will, undoubtedly as a rule, prove more satisfactory to crib it, more especially if the high, or what may be called regular, plan be adopted. If, however, the low, rambling plan such as was described by the writer in the last issue be decided upon, then the shell frame would prove most satisfactory. A well cribbed house needs no tying together with iron rods unless the bins are very large. In such cases the walls must be made extra thick



WEBER GAS AND GASOLINE ENGINE.

or else tied together with rods the same as the frame building.

Frame houses can be made very strong and enduring by erecting a skeleton of heavy timbers on the barn frame plan. Such a frame, if made of good timber, would last for a half century or more, as can be attested by examination of some of the old barns found in the rural districts of the older sections of the country. Such a plan can be safely adopted for all small elevators that are not intended to be more than about twenty feet high from basement wall to square. When running to a greater height cribbing may be considered the better plan.

The majority seems to have an idea that grain confined in a bin presses the same as water in a tank, that is, that it presses outward with the greatest force at the bottom. That, however, is not quite true, as can be found by an examination of bulging bins. When the walls are too weak to be self sustaining, as in balloon frames, the tie rods should be more numerous as we go upward from the bottom until the top is approached, when the number can be lessened again. That fact is entirely ignored by the builders of crib elevators, as the heaviest walls are found at the bottom of the cribbing. Just as though the walls were to sustain graduated weights as do the walls of buildings having many floors, each bearing its own load, instead of a graduated outward pressure up to the center of the bin. However, as the walls of such buildings are always made strong enough to withstand all strains, no evil consequences are observable. Not so with the light frame; if the bottom is tied at the expense of the middle some excessive outward bulging may be expected if the bins are deep.

It would be well to remark that unless the proposed builder of an elevator be a mechanic and understands something about elevator building himself, he should employ a capable mechanic to make him a set of plans before attempting to put up the building.

Plans of practical elevator builders are a great aid and will be found useful to any man who is building.

* * * * *

The power transmitting agencies in an elevator should be of the kind that run smooth; and light belts for all

quick motions are much the best as they are noiseless and make no jar. Gear wheels of every kind are very objectionable and should never be used where it can possibly be avoided, and not then unless for very slow work on shafts that run at right angles to each other. It is quite rare though, that such conditions present themselves in an elevator; possibly never unless to connect corn cribs with house by the use of drag belts, or possibly now and then when a drag has to be used for feeding the sheller on account of not being able to get up with the driveway or down with the sheller.

One very simple lesson in belt transmission should be learned by every elevator operator, and that is, a belt transmits power in proportion to the speed it travels. For instance, if a belt transmits 10-horse power when traveling 1,000 feet per minute, it will transmit 20-horse power if the speed be increased to 2,000 feet per minute. All will therefore understand that if a belt is laboring too hard and refuses to do its work properly, an increase in speed will remedy the difficulty. A belt is also supposed to transmit power according to its width, that is, a 12-inch belt making 1,000 feet per minute will transmit twice the power of a 6-inch belt running at the same speed. The two leading facts are presented so that a choice can be made when difficulties of that kind occur. The transmitting power of a belt is also greatly augmented by increasing the lap of the belt around the pulleys which can be done by the use of idler pulleys.

For doing the slow work in elevators chain belts should be used, there being no slip to them they are just as reliable as gear wheels and far less objectionable, being almost as noiseless as belts unless running at too great speed. For high speeds chain should not be used, the common belting being much better. Good rubber belting is better for elevator purposes than leather on account of the dry and dusty character of the work. Good leather belting answers well for transmitting power from engine to main line; but inside of the house it is better not to use it.

* * * * *

All elevators or grain buying outfits doing local business in the country must be provided with wagon scales, as without them business cannot be done, but a great many that have not been taught by experience seem to think no scales are needed inside small elevators. It is true that many elevators have run for very many years without scales of any kind inside the building and are still being operated in that way, nevertheless a pair of inside hopper scales for shipping out purposes is very convenient and a most valuable acquisition, as with the use of such, some kind of a record can be kept of what is being done. At least a house can always tell what it is putting out if reasonable care be exercised, while without an inside scale nothing is known until reports from commission houses are received. It is not necessary that small houses have carload scales, nor, indeed, is it advisable on account of both the expense and the room required for such large scales; but all should have a scale large enough to fill a car with wheat at four drafts, or larger than that if convenient and expedient.

THE WORLD'S BARLEY PRODUCTION.

The total production of the barley in the world is estimated at 825,000,000 bushels. Of this amount Europe produces from 630,000,000 to 650,000,000, valued at \$800,000,000. The following will show the average production for each country of the world: Algeria, 60,500,000 bushels; Austria-Hungary, 88,500,000; Belgium, 3,665,700; Bulgaria, 15,125,000; Canada, 19,250,000; Denmark, 20,650,000; Egypt, 27,500,000; British Isles, 90,750,000; France, 49,500,000; Germany, 93,500,000; Holland, 4,400,000; Norway and Sweden, 22,000,000; Roumania, 19,250,000; Russia, 129,250,000; Spain, 77,000,000; Turkey, 13,750,000, and the United States, 57,750,000 bushels.

Col. C. J. Murphy, superintendent of the American exhibits of corn and its food products at the great exhibitions of Glasgow and Edinburgh, Scotland, is preparing to make a similar display at the London exhibition this summer. His indefatigable efforts have been productive of good results, and much is expected from the show he will make in London, of all the forms of human food we derive by our manufacture and cooking from Indian corn.

THE WHEAT STRAW WORM.

Professor F. H. Snow of the Kansas Experimental Station recently wrote: During the past ten days I have received letters from farmers in eleven different counties complaining of the depredations of a new worm upon the wheat crop. These counties are Rice, Russell, Ellis, Rush, Lincoln, Jewell, Cloud, Ellsworth, Barton, Franklin and Douglas. Samples of wheat have been received from all these counties disclosing the presence within the stem of the cause of all this difficulty. This little worm, by destroying the interior tissue of the wheat stem between the head and the uppermost joint and sometimes between the lower joints, prevents the sap from reaching the head, which consequently is not properly filled. In many cases the heads thus affected are entirely destitute of well-formed grains of wheat. This insect is the so-called wheat-straw worm (*Isosoma tritici*), originally described by Professor Riley, United States entomologist. This insect has become a decidedly injurious enemy to wheat in Southern Illinois, where according to Professor Forbes the yield of wheat has been diminished annually by many thousands of bushels. In Kansas this insect made its first appearance in 1885, and much of the damage in that year ascribed to the Hessian fly was in fact inflicted by this wheat-straw worm. Since that year the insect has apparently disappeared from Kansas wheat fields, although doubtless it has continued to exist in such small numbers that its depredations have been entirely unnoticed.

This insect belongs to the order of hymenoptera, that large order of insects which includes the bees, wasps, sawflies, ichneumon flies, and many other insects with four membranous wings. It will be absolutely impossible to check the work of this pest in the present crop. Fortunately its life history is such that it seems possible to prevent a repetition of its ravages upon the next crop. The little worm will remain in the straw during the whole of the summer, autumn and winter, so that if the straw and stubble be destroyed the insect will also be destroyed, and it will be impossible to continue the existence of the species wherever this destruction of the stubble and straw is made complete. There are some natural enemies of this wheat pest which assist in keeping its numbers within bounds. I quote the following from a report of Professor Forbes of Illinois in reference to remedial measures in connection with this insect:

"As the greater part of the larvæ remain in the stubble, especially if the grain be not cut very close, and as they continue here in one form or another, at least until midwinter, and usually until the following March or April, it is at once evident that nearly the entire brood may be exterminated by burning the stubble. In case of a light yield, or when the wheat has grown up to weeds, it will often be difficult to burn the field over, but if the insect is at all destructive it will doubtless pay to run a mower over the field, burning the vegetation after it has dried.

"The usual absence of wings and the slight locomotive power of so minute an insect give us another resource against its injuries, since a simple rotation of crops must almost wholly prevent the adults from laying their eggs in wheat as they emerge from the stubble in spring. Such of their number as have the power of flight may doubtless find suitable situations for ovipositions, and if a field of wheat lies adjoining to one in which that grain had been raised the preceding year, the adjacent border might become infested by even the wingless females, but doubtless this injury could not extend far.

"Whether it will be best to take any measures against those individuals carried away in the straw it is impossible to say with certainty without further observation and some slight experiment. It is not unlikely, however, that these are killed in threshing; and even if this

is not the case, as the greater part of the straw is commonly fed before the adults would emerge in ordinary seasons, very few of those infesting the straw could possibly be available for the maintenance of the species the following year. At any rate the simple and easy precaution of burning the remnants of straw stacks early in spring would remove all possible danger from this source.

"In brief, the burning or destruction otherwise of the stubble, occasional rotation of crops, and possibly the burning of surplus straw in spring, would completely destroy this insect, or keep it so thoroughly under control that its injuries could no longer be reckoned of any importance. And fortunately the usual wingless condition of the pest makes it possible for each individual to

A 75,000-BUSHEL CLEANING ELEVATOR.

The elevator of which we here give sections and a cut was built for Messrs. Requa Bros. of Chicago by the Heidenreich Company, the well-known elevator builders of 99-101 Metropolitan block, Chicago. The elevator was built for cleaning purposes, has a capacity of 75,000 bushels, and contains two Monitor Wheat Cleaners and two Morgan Oats Clippers. On account of the soft soil exceedingly great care was taken in building the foundations, and the result has been that there has not been a settlement of even a fraction of an inch since the completion of the building.

The power is furnished by a Rice Automatic High-speed Engine, transmitting the driving power by means of a manila rope transmission to the cleaner shaft, located on the first floor. From this in turn the three elevators in the cupola are driven by means of one continuous manila rope, 1½-inch in diameter, running under ceilings and between joists, as to be entirely out of the way of spouting and scales, and not interfering with traffic in any way. Not only are the elevator counter-shafts driven by rope transmissions, but each individual elevator head is driven by a separate rawhide rope transmission, with tightener, in a manner to make the running entirely noiseless. This is the first time that this has been accomplished, and every visitor is impressed with the unusual absence of noise from cogwheels or heavy friction drums, so common in an elevator cupola.

When rope transmissions were first introduced in elevators by the Heidenreich Company a few years ago, it was predicted that they would replace belting in all its different phases, but it was hardly expected that spur gear transmission could be substituted by rope transmission. This has, however, been accomplished, and it is to be hoped that some day the everlasting noise in our elevators will be a thing of the past, and it may still be hoped that the running of an elevator may not be looked upon as the most undesirable piece of work in the world.

This elevator is located at Forty-fourth street and the Wabash tracks, and is leased by Morris & Co., Chicago Board of Trade men. Mr. H. W. Fitch, who personally looks after this elevator, is a member of the firm, a very genial gentleman, and one of the best grain judges in this country.

WHY DO WE SAY HAY-SEED?

Why do we say hay-seed? Hay does not grow, and, of course, does not bear seed. Grass grows, and each different kind of grass, as timothy, clover, blue-grass, etc., bears its own seed. The older dictionaries do not give the word.—*Indianapolis Journal*.

Hay does grow, and hay-seed is the seedy and weedy rubbish and residue of the haymow, which is swept up and burned before the new crop is put into the barn.—*Boston Transcript*.

Oh, no. Grass grows, and after it is cut, cured, dried and harvested, it is called hay. The hay does not grow after it is harvested, and does not go to seed. Leastwise that is the way it is in this part of the country. Perhaps in Massachusetts hay continues to grow after it is cured.—*Indianapolis Journal*.

Uncle Jerry Rusk wants a mammoth corn palace at the World's Columbian Exposition. He is right. Most of the foreigners would better understand it if it were called a maize palace, as they call all other kinds of grain "corn" except our American corn, and that to them is Indian maize; but it would be a good thing to have them understand that corn is king in this country.



A NEW CLEANING ELEVATOR.

defend himself without liability to have all his efforts disappointed by the neglect of others."

\$1.50, \$1.50, \$1.50. Only one dollar and fifty cents a year for the *American Miller* and the *AMERICAN ELEVATOR AND GRAIN TRADE* sent to any address on this continent. Two of the best trade journals published in America.

Luke Marvin, assistant manager of the Lake Superior Elevator Company, states that the wheat which the experts could not account for in their report in St. Paul today is the exact amount of bin-burnt wheat disposed of under the direction of the railroad and warehouse commission and of which the experts would, of course, get no account. The experts apparently found no other wheat missing or shipped out without inspection or weighing.

MOTIVE POWER FOR COUNTRY GRAIN HOUSES.

The question of a more economical, steady and reliable motive power for country elevators than heretofore in use was never of more interest to our readers than at the present time. The irregularity of motion where one desires to operate cleaning machinery of any kind in addition to running the stand of elevators, and the annual expenses incident to replacing worn-out horseflesh by the use of "sweep" horse powers, are annoyances under which all grain men have suffered long, though perhaps not patiently. Wherever steam or other engines have been considered for small grain houses in place of horse powers, there the first cost, the expense of engineer or other mechanic capable to care for and keep them in running order, cost of fuel, dangers of boiler, gas or oil explosions, fires, etc., have risen up to stare one in the face.

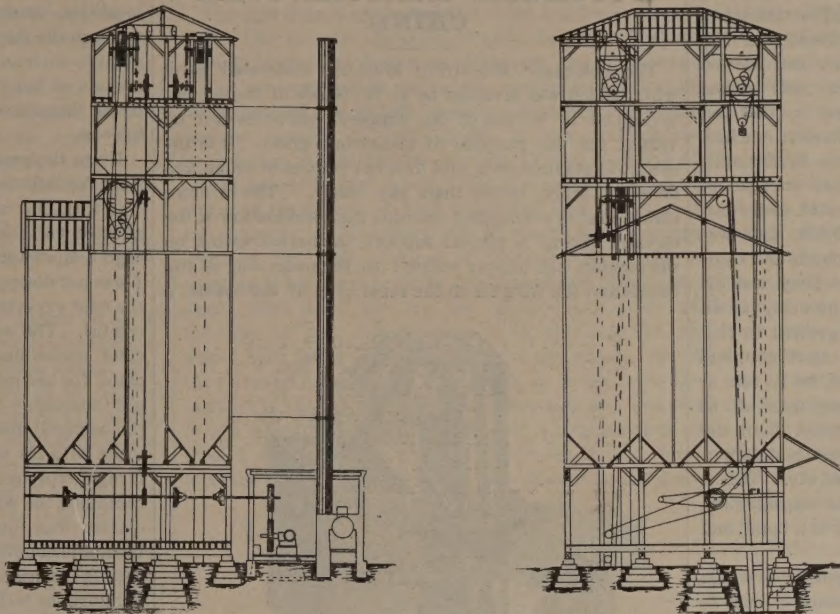
We are confident, therefore, that the subject of this article will be entertained by our readers with great appreciation. The Morton Tread Power, appearing on this page, is claimed to be a most thoroughly practical solution of these absorbing problems. The machine is the acme of ingenuity, embracing, as it does, every mechanical feature desired for elevator motive power, for which purpose it was especially conceived and developed. It is the only tread power having an "adjustable elevation."

This feature is so arranged that the weight of the horses, the elevation itself, the driving pulley or sprocket wheel, the governor or flywheel, and the drive shaft, all turn on a common center, and it is further arranged so that by merely turning a crank the operator can at will, without stopping or removing the horses from the power when at work, vary the pitch of the elevation without altering in the slightest degree either the tension or the line of the drive belt, thereby developing at will either more or less speed or more or less power to agree with the amount of either needed in operating the machinery throughout the building. Or, by means of the same "crank," when the operator desires to rest or feed the horse or horses, the "elevation" can be lowered to a horizontal position, in which case the horses stand with as much ease and comfort as they would on a barn floor. The machine is also provided with a brake, which may be connected by a brake rope with the office or most frequented part of the elevator, and the power can be stopped or started at a distance. Neither the machine or the horses need any special attention from the operator. If the brake be applied at the office, the horses must stop. If it be "let off," they must move with regularity of motion. The power itself automatically controls the motion of the horses. They have no choice in the matter and can neither "soldier" so as to retard motion, nor can they by any possibility accelerate the speed beyond that for which the governor is "set" by the operator. Should a belt fly off in any part of the elevator when the horses are in motion no harm can come to them or the power.

The governor is warranted to be as prompt, reliable, positive, safe, and perfectly automatic in its action as that of any steam engine. It is the only power having self-oiling traverse wheels, self-oiling and adjusting boxes and case-hardened cold-drawn steel rods. It is also claimed to have larger bearings and fewer wearing and power consuming points of friction than any other tread power. The links, cross rods and traverse wheels are the principal wearing points in any tread power, and in these parts absolute perfection seems to have been reached in the "Morton." It has exactly one-half the number of traverse wheels used in any other kind of tread power.

Its traverse wheels are each provided with self-oiling cups and they revolve on steel rods. The manufacturers have no hesitation in warranting the machine as not only being lighter running, but also to last twice as long as any other tread power offered to the elevator grain trade.

The endless link belts, to which are attached the plank on which the horses tread, are among the most ingenious qualities of the machine. They consist of malleable iron



SECTIONAL SIDE AND END VIEWS OF CLEANING ELEVATOR.

links, to the top half of which the planks attach on which the horses tread, while the under half of each link is arranged with "revolving anti-friction roller cogs," which revolve into and out between the cogs of the two driving cog wheels on the drive shaft of power. These revolving cogs operate on the same principle as the ball bearings now used in all high-grade bicycle wheels for dispensing

vators, recognized the marked superiority of these powers for operating country elevators not requiring more than 1, 2 or 3 horse power, and effected a large number of sales of them. In short, during 1890 the makers found that the Pease Company were selling more of them to grain men than they themselves could do, and have now (1891) contracted the exclusive general agency of these powers with the Pease Company, who aim to make them popular not only with owners of elevators, but with architects, contractors and builders of grain houses not requiring greater power than these powers offer. The sale they are acquiring is remarkable, and the Pease Company will take great pleasure in furnishing a list of where about 100 of these powers have been sold in the past ninety days.

In point of first cost, the Morton Tread Power placed in position and housed complete for business, costs no more than a good sweep power likewise placed and housed, while the "Morton" Tread occupies not more than one-quarter the floor space required by any sweep power.

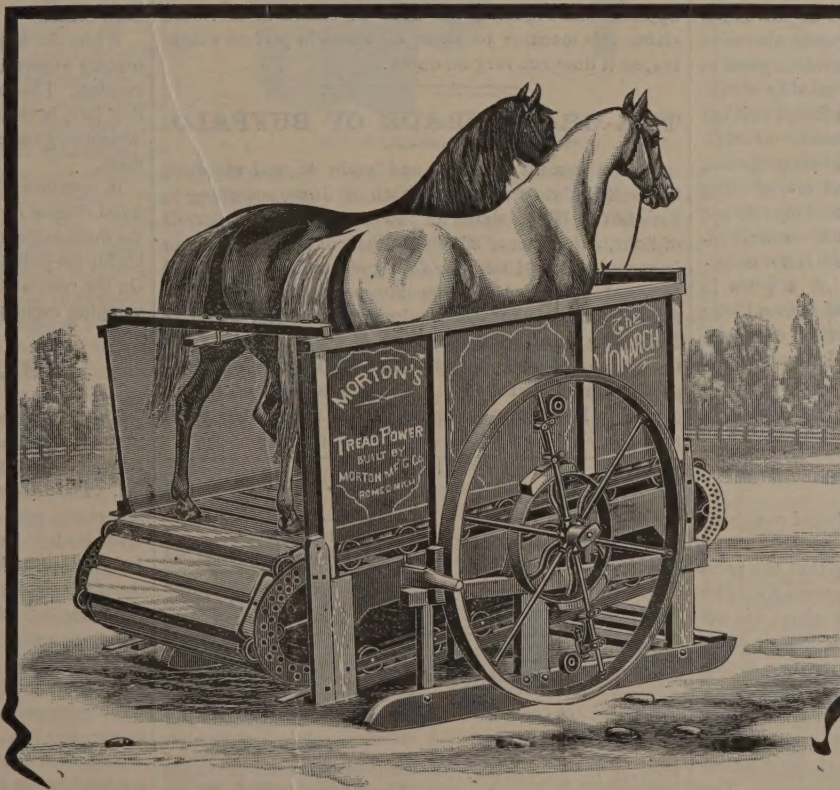
The company warrant that one, two or three horses on the Morton Power will develop 15 per cent. more power than a like number of horses on any other tread power, or 25 per cent. more than a like number of horses on any sweep power.

They will send the powers "subject to trial" to parties in good commercial standing, on the understanding and warranty that if the power fails to fulfill in every respect as herein claimed, the purchaser may return same at the Pease Company's expense for freight both ways. All communications concerning this machine should be addressed to E. H. Pease Manufacturing Company, Racine, Wis., for if addressed to the makers same will simply be sent on to the Pease Company for attention.

COMBINATION OF FLOATING ELEVATORS.

An important departure was made on June 29 in the methods of conducting the business of the floating grain elevators in the port of New York. A new corporation was formed, named the International Grain Elevator Company, with a capital stock of \$1,600,000. The offices will be in the Produce Exchange building. The officers of the company are Edward G. Burgess, president; Edward Annan, vice-president, and John McCue, secretary. They are all members of the firm of Annan & Co. The treasurer is George D. Puffer, who has been the owner of rival elevators. It was learned that Annan & Co. put into the concern 19 elevators, Mr. Puffer 5, and Milton Knapp 2. The object of the new company, it is said, is to economize. It is said that ever since the rate of $\frac{5}{8}$ of a cent a bushel was established by law the elevators have been losing money. The incorporators believe that by joining hands they can stop the leaks and expenses incident to business rivalry, and earn a decent income on the capital invested. The only elevator man who holds out is Henry D. MacCord. He is the owner of two elevators, and one of them, the Columbia, is one of the finest in the harbor. He says he is not hostile to the new company, but that he prefers to preserve his independence.

The shipments of wheat, and flour in its wheat equivalent, from San Francisco during the twelve months ending June 30 aggregated 17,393,000 cents, valued at \$25,086,090, against 17,271,090 cents, valued at \$22,837,000 for the previous crop year.



THE MORTON TREAD POWER.

with both friction and wear, and their action is as perfect in its effect on this power as in the case of the bicycle wheel.

The makers of this power are extensive manufacturers of iron-working machinery, in which line they have a national reputation, and the invention and development of this special grain elevator horse power is the outgrowth of their best inventive talent. More than a year ago the E. H. Pease Manufacturing Company of Racine, Wis., who are extensive jobbers of everything in motive power, machinery, fittings, supplies and repairs for grain ele-

OAT HULLS FOR FEED.

Over forty years ago a wideawake, shrewd young German settled in Akron, O., and opened a small but very choice stock of groceries. He made it a part of his business to keep articles of limited sale but of high excellence. He found a demand on the part of a few for oatmeal, which at that time was not made in this country. He imported some, and soon educated his customers to wanting it. The demand increased, and he engaged in making it. After a while the possibilities became apparent and Mr. Ferdinand Schumacher sold out his grocery and devoted himself to the new business, extending it until he had three large mills and an elevator employed in this and closely allied industries, such as pearl barley, cracked wheat, hominy, etc. A few years ago his Jumbo mill, six stories high, covering more than half an acre of ground, and filled from basement to attic with costly machinery, was burned; Mr. S. lost \$750,000, and was seriously crippled in resources. Akron friends and capitalists rallied to his aid, a large milling company was organized, and Akron still maintains its supremacy in an industry that had its birth and gigantic growth in that city. The brains of the oatmeal trust are at Akron, and the largest mills. Every day in Akron, be it fair or stormy, a pleasant-faced, earnest-looking man of 65 may be seen driving his black horse briskly about the streets looking after his great milling interests and numerous other affairs—real estate, stone quarries, etc. This is Mr. Schumacher, and everybody knows and respects him. For many years his word has been as good as a bond, and his honesty is unquestioned.

He has erected a costly and beautiful public fountain in front of his fine residence; has given many dollars to the spreading of temperance literature; has several times served on the state ticket of the Prohibition party. At the time he started his grocery most groceries had a back room "annex" where liquor was sold; he would none of it, and never employed a person who used intoxicating drink. Now, isn't it a pity that such a man, public benefactor in many ways, should in his latter days be associated with a form of trading that is not only wronging thousands of farmers, but dumb animals as well? I refer to the use of oat hulls in the adulteration of provender. Formerly oat hulls were given away, and many tons were thrown away, but when the spirit of adulteration grew in stature and men began to make money by mixing worthless offal with genuine goods, then it was found that oat hulls would give an oats-provender appearance to mixtures of ground screenings, middlings, mill sweepings and clay. Then oat hulls were in demand, and to-day bring \$14 per ton. It is idle to say that the oatmeal men do not know what is done with these hulls. With oatmeal retailing at 6 to 7 cents per pound, it certainly is not necessary to sell the refuse of the manufacture at a price in excess of that of the best hay. A law that demands the branding of ground feeds with the proportion of ingredients therein is now a necessity, and should find a place on the statute book of every state.—*L. B. Pierce in New York Tribune.*

THE HAY CROP.

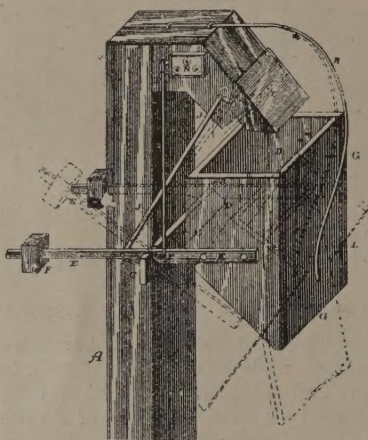
Here is what an agricultural paper has found out about the hay crop:

"In Illinois fifty-nine correspondents say that the prospects for a large crop are good, though in some localities the clover has lodged an account of heavy rains. On the other hand, thirty-five correspondents say that in their counties the crop will be light owing to the spring drouth. The outlook for the state, as a whole, is good. In Indiana the condition does not vary greatly from that in Illinois. In Ohio the condition is the same as in the two above-mentioned states. One-third of the counties report a light crop, especially on new meadows. The condition of the hay crop in Kentucky is just the opposite of that in the states previously referred to. In two-thirds of the counties the crop is very poor. The drouth in May gave it a backset from which it was not able to recover. Michigan is very much worse off than Kentucky. Forty-six correspondents report the outlook as bad, and only ten report the crop as average in condition. Missouri is rejoicing in an abundant crop. Only one county reports the crop as below expectations. Kansas and Nebraska are in the same condition as Missouri, the hay crop being uniformly large and in good condition. In Wisconsin the drouth has blasted the hopes of an even fair hay crop, and only ten correspondents report the con-

dition as good. In Iowa the early drouth was not able to retard the grass beyond recuperation, and the copious rains have brought it forward in fine shape. The condition in the Dakotas is even better than in Iowa, eight out of every nine correspondents giving an encouraging report. In Minnesota the hay prospects are good in two-thirds of the counties; poor in the others."

AUTOMATIC MEASURING MACHINE.

The Automatic Measuring Machine illustrated herewith, which was invented by J. W. Gaede of Maroa, Ill., is claimed to be one of the simplest machines ever invented for the purpose of measuring grain. It is the easiest to manufacture, and does not get out of order, and does the work better than any other. The inventor claims that in a weighing machine the combination of the elevator having a pivotal support, the beams resting on the support, the hopper secured to the outer end of the beams and the weights on the inner ends of the beams, a



door pivoted in the front end of the hopper, and a spring having one end secured to a stationary support and at its opposite end engaging the door as shown in cut. He claims this machine to excel all others in perfect weighing, as it does not vary an ounce.

THE GRAIN TRADE OF BUFFALO.

The movement of flour and grain to and eastward through Buffalo during the month of June, according to the *Milling World*, shows an increase of 217,556 barrels of flour, a decrease of 235,237 bushels of all grain, and an increase of 793,064 bushels of all grain and flour reduced to wheat, compared with the like period in 1890. The following tables show the receipts of flour and grain at Buffalo by lake during the month of June, and also from the opening of navigation to June 30, inclusive, as compared with previous years. The first table shows the receipts by lake during the month of June in the years named:

	Flour, bbls.	All Grain, bu.	Flour and grain, bu.
1891.....	804,352	10,735,971	14,556,643
1890.....	586,796	10,971,298	13,758,579
1889.....	467,141	12,228,808	14,564,513
1888.....	642,388	10,256,382	13,468,322
1887.....	432,794	12,786,095	14,950,065
1886.....	624,809	6,448,804	9,572,849

The following table shows the receipts of flour and grain from the opening to June 30:

	Flour, bbls.	All Grain, bu.	Flour and grain, bu.
1891.....	1,893,128	26,781,937	35,774,294
1890.....	1,677,090	33,451,568	41,350,715
1889.....	1,164,737	26,648,224	32,471,909
1888.....	1,201,959	10,999,394	26,980,189
1887.....	970,623	28,324,483	33,194,595
1886.....	1,338,979	21,638,514	25,333,403

Among our immigrant's from foreign shores there is one class which will soon be faring worse than the persecuted Jews of Russia. They are too noisy and quarrelsome, perhaps, but otherwise they are a decent and industrious kind. Yet they are doomed to be hunted from street to street and from house to house; a price is set upon their heads; every man's hand is against them, and no court of justice will listen to their appeal. This unfortunate race is the English sparrow.

EXTERMINATING CHINCH BUGS.

Professor Snow of the Kansas experiment station is meeting with success in exterminating chinch bugs. In the third report, just issued, Professor Snow says:

The abundant rains and the cold weather of May and early June have caused the wheat to put forth a vigorous growth and in most cases to overcome the enfeebling effects of the Hessian fly and the chinch bug. In many localities, however, the chinch bug has lived safely through the dangers of water and frost, and has multiplied to such an extent as to cause alarm among the farmers, not so much for the wheat crop itself as for the corn fields threatened with invasion after the approaching harvest.

Up to the present time (June 15) nearly 1,000 applications for infected bugs have been received and satisfied. The first 500 of the packages sent out contained bugs affected with the bacterial disease. This disease requires a high temperature for its most successful propagation, and I was not disappointed to find that comparatively few of the field experiments with this first lot were certainly successful. The weather was too rainy and cold. In some cases, undoubtedly on account of the overwhelming demand for the infection, material was sent out which was not thoroughly infected. Wherever the experiments with the bacterial disease proved a failure, a second trial was made with the white fungus disease upon request of the farmer experimenting. The second 500 packages sent out contained the white fungus exclusively. Wherever this disease was introduced into a field, it found the most favorable conditions for its development. The fungus thrives luxuriantly in a moist atmosphere and at low temperatures as well as at high temperatures.

Many correspondents report that the white fungus disease is carrying off the bugs by the thousands.

During the month included by this report I have personally visited experiment fields in Chautauqua and Cowley counties, and my first assistant, Mr. E. C. Hickey, has visited many fields in Wilson and Labette counties, abundantly verifying the statement of the farmers and carefully noting the fact that the bugs were not dying of white fungus in fields in which the infection had not been placed.

While the field experiments have been going on the laboratory experiments have been continued without interruption. The bacterial disease is still raging in the infection jars, in readiness for use in the field as soon as the meteorological conditions shall favor its outdoor development.

In conclusion, I may say that the workings of the bacterial disease in the field have been unsatisfactory, though the meteorological conditions of the past month have been highly prejudicial to fair experimenting with this disease. On the contrary the white fungus disease seems to be developing rapidly and giving good results.

BARLEY AND MALT.

The imports of barley into Canada from the United States last year amounted to 12,217 bushels, of which 8,585 bushels went into Manitoba and 2,562 into British Columbia. The imports of malt from the United States during the same year amounted to 44,728 bushels, of which 4,401 bushels went into Manitoba and 39,942 bushels into British Columbia. The Canadian duty upon barley is 15 cents per bushel and the same upon malt, while the American duty is 30 cents per bushel upon barley and 45 cents upon malt. Ontario and Quebec are the only provinces credited with exports of barley, and Ontario and British Columbia the only provinces credited with exports of malt, the malt going from the latter province amounting to only 279 bushels. It would seem from these facts that Manitoba has malting establishments and that they found it profitable to import 8,585 bushels of barley from the United States for use in them, and that the brewers there found it profitable to purchase 4,401 bushels of malt from that country. The importation of barley into British Columbia amounting to only 2,562 bushels does not indicate the presence of malting establishments there, but the importation of 39,942 bushels of malt indicates the extent of the brewery interest. The malting interest in Ontario is a large one, but it suffers from both the American and the Canadian tariffs.—*Canadian Manufacturer.*

Africa signifies a land of corn or ears. It was celebrated for its abundance of corn and all sorts of grain.

MINNEAPOLIS GRAIN TESTER.

The Minneapolis Grain Tester, illustrated herewith, which is manufactured by J. L. Owens & Co. of Minneapolis, is constructed on the same principle as the large separators made by this firm. It is a small machine, and is used for cleaning small quantities of grain to determine the amount of foreign matter mixed with the grain. It separates wild pea, wild mustard, wild buckwheat, chess, cockle and all other foul seeds from wheat without losing any wheat, and thus enables buyers to easily determine the percentage to dock for dirt and foreign matter.

The tester is a very simple machine, and is especially adapted for the work it is made to do. It takes up little room; is easily operated, all of its parts are open to inspection, and it does its work well. A great many are in use throughout the Northwest, and give entire satisfaction.

THE DULUTH ELEVATORS VINDICATED.

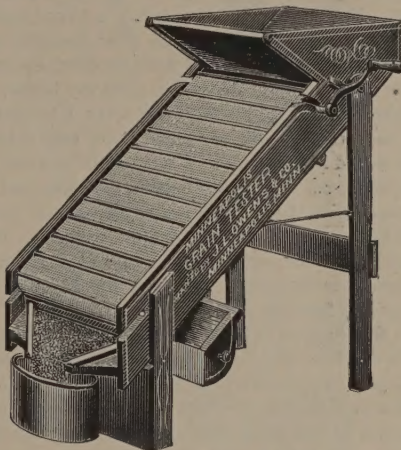
The legislative committee which was appointed to investigate the charges against the Duluth elevators adjourned till next January after a continuous session since the 13th of May last, with the exception of an interval of ten days and Sundays. The committee has practically, says the *St. Paul Pioneer Press*, though not formally, concluded its labors so far as the Duluth elevators are concerned. For the investigation has resulted in their complete and triumphant vindication and in the overwhelming refutation of all the charges made against them. Of all the foul web of infamous calumny which their accusers undertook to weave about them, not a shred or vestige remains. The entire case which was trumped up against them has been absolutely annihilated.

The investigation began last winter by a committee of the house and was prompted by pretended information volunteered by two or three discharged employees of the elevator companies. They alleged that these companies had shipped very large amounts of wheat without inspection and had also stolen a large amount by means of secret elevator contrivances. The house committee appointed to investigate these charges was composed chiefly of Alliance men, and the Alliance agitators seized upon the charges as political capital, and brought every possible influence to bear upon the committee to influence its partisan zeal and prejudices and to control its methods and its verdict. Under the pressure of these influences the investigation resolved itself into the most shameless, arbitrary, one-sided star chamber proceeding ever witnessed in this state. All its proceedings were secret. The testimony received was wholly *ex parte*. The accused parties were neither permitted to be present by counsel to cross examine the accusing witnesses nor to put in any testimony for the defense. The court was organized to convict. In accordance with the outrageous spirit of partisan unfairness in which this persecution was conducted, the committee appointed six clerks to examine the books of the elevator companies, and to compare them with those of the state inspector who had no other qualifications for the task than their partisan bias and their need of a job. They consisted of three Farmers' Alliance men who were employed as clerks of house committees, including the unsavory Eric Olson, who was a clerk of two or three house committees at the same time, and the three chief prosecuting witnesses, laboring men who had been dismissed from the employment of the elevator companies. These men were as incompetent as the result proved them to be dishonest. But it was upon the schedules furnished by these men that, toward the close of the session, the majority of the committee reported that the elevator companies had shipped out 850 carloads of wheat without inspection, besides some 300,000 bushels shipped by steamboat. We shall have something to say about these schedules further on. It is enough now to say that the report was completely discredited in advance by the manifestly unfair and partisan testimony upon which it was based.

This investigation by the house committee was so transparent a farce that the legislature, in deference to outraged public opinion, provided for a new one by a joint committee of the House and Senate, composed of the old house committee and Senators Geisel, John Day Smith and Sevaton. The bill creating it appropriated \$10,000 to pay its expenses, and required it to conduct its proceedings openly, in accordance with the ordinary rules of fairness, and to recall the witnesses already examined

for cross-examination. The result of this investigation has been, we repeat, to completely explode all the charge against the Duluth elevator companies. One of the first steps taken by the committee was to employ a number of expert bookkeepers to make transcripts of the inspection and shipping records of the Duluth elevators and to compare them with those of the state inspector. The resulting schedules differed widely from those of the Eric Olson crowd, and to the extent of that difference proved the latter and the charges based upon them to be false.

The new schedules showed that there had been shipped out of the Duluth elevators 279,000 bushels of wheat without inspection; but those shipments were accounted for in a manner which not only in no wise reflected upon the honesty of the Duluth elevator companies, but which was very greatly to their credit. It was conclusively proved that of this 279,000 bushels 259,000 consisted of wheat called "burned wheat," that is to say, of the posted wheat of the harvest of 1889 which had been received at the elevators on the theory that it would stand storage and turn out well. Instead of that it proved, after a short period of storage, to be bin-burned and badly damaged. Now under the law the elevator companies had the right to post this wheat, and in that case the loss would have fallen upon the owners of the wheat. But if the elevators had adopted this policy it would have discredited the entire wheat crop of Minnesota and Dakota. It was already known at the East that a large amount of frosted wheat had been received into the Duluth elevators, and grain men everywhere were discussing the ques-



MINNEAPOLIS GRAIN TESTER.

tion whether it would prove to be a good milling wheat or the reverse. If the real state of facts had been made known it would have created a panic in the Northwestern wheat market. The warehouse receipts of all the elevator companies, which were held by the local and Eastern banks as security for borrowed money, would have become valueless for that purpose and the loans promptly called in, thus creating a disastrous financial panic. The elevator companies made the heroic resolve to avert these disasters, from which the farmers of Minnesota would have been the principal sufferers, by quietly buying up all the warehouse receipts which had been issued for wheat they assumed to be good wheat, now proved to be worthless, and with the permission of the warehouse commissioners to ship this burnt wheat secretly out of the state. They laid the facts of the situation before the warehouse commission, who fully approved of the course proposed as the only means of averting a disastrous wheat and financial panic. The Duluth elevator companies, at the sacrifice of nearly \$100,000 of their own money, thus saved the producers and dealers in wheat in this state and Dakota millions of dollars, and by this one heroic act did more for the farmers of Minnesota than all the howling agitators of the Farmers' Alliance have ever done or will be able to do in a hundred years. It is for thus saving the farmers of this state from the disaster which was impending over them that the representatives of the Farmers' Alliance have been seeking to brand the Duluth elevator companies with the most infamous slanders.

This disposition of 259,000 bushels of burned wheat accounts for all but 20,000 bushels of the wheat shown to have been shipped without inspection. But every bushel of this has been honestly accounted for. About 14,500 bushels were due to a clerical mistake in the name of the boat upon which they had been shipped. The books showed that it had really been shipped by another boat after inspection. Two or three other clerical errors accounted for a few hundred bushels more, and the remain-

ing three or four thousand bushels consisted of wheat which had been put in the elevator to clean, then taken out, inspected and put back. Thus every bushel charged against the elevator companies as having been shipped without inspection has been completely accounted for in a manner, which not only constitutes an absolute vindication of the elevator companies, but which entitles them to the highest praise and especially to the lasting gratitude of the farmers of Minnesota.

As to the absurd charge of the discharged employees that the elevator companies had been stealing wheat by allowing it to leak through holes or crevices in their shipping bins into pocket bins under them, this was refuted by simply showing the committee how the bins were constructed, and that this sort of fraud, which was just up to the level of the witnesses' moral caliber, was simply impossible.

It was also admitted by the companies that they had shipped out, partly without inspection, about 40,000 bushels of wheat which they had on hand when the inspection law passed and which was the accumulated overages of all the years they had been operating before that law was enacted. But this they had a perfect right to do under an express provision of that law. They kept this overage on hand as a sort of reserve to draw upon in case a shortage should occur under the operation of the inspection law; but finding that they came out with a slight overage, they shipped the old overage, partly without inspection, as they were entitled to do. It is an interesting fact to note here that the entire overage of the Duluth elevators since the inspection law went into operation in 1885 to the close of 1890, upon receipts and shipments of 56,000,000 bushels, was 11,000 bushels, equivalent to one-fifth of an ounce per bushel. Reflections upon this fact may be postponed to another time. We have already said that the new expert schedules were a complete refutation of those gotten up by the Eric Olson crowd, and proved the latter to be in large part an impudent falsification of the records. Nevertheless, the defense insisted upon taking up the Olson schedules, item by item, announcing its purpose and its ability to show wherein they were false or erroneous, and to dispose entirely of the fiction that it had shipped 850 carloads without inspection. In the limited time allowed the defense, and as far as it was permitted to go in the examination of these rotten schedules, it made its promises good. Mr. Severance had disposed of 164 of the 850 alleged carloads when the committee adjourned. He went far enough to show that these alleged uninspected carloads consisted of many carloads which the books showed had been regularly inspected, weighed and shipped; of a great many carloads which were never in the elevators at all, but which were rebilled on the tracks for Superior, Minneapolis and other places; of many carloads of screenings from the Imperial Mill at Duluth with which the elevators had nothing to do, and of many carloads which were never shipped at all. In other words, these pretended schedules were a compound of ignorance, stupidity and malicious mendacity.

It remains to say that of the thirty-five days during which the committee was in session, the prosecution consumed thirty, while the defense had only five days within which to produce its testimony. But little testimony for the defense was necessary; for most of the facts in vindication of the elevator companies were brought out upon cross-examination of the witnesses for the prosecution. The accusing witnesses were either forced to admit that they had lied in their original testimony or were proved to have done so by other testimony before the defense put in an atom of its own testimony. But its own testimony came like a flood from the mountains to sweep away every vestige of the infamous slanders with which it had been assailed. And while it vindicates the elevator companies, it convicts the Alliance agitators, not merely of a blind and foolish credulity, but of an infamous complicity with the authors of these slanders in endeavoring, by the basest means, to fasten them upon the accused parties without giving them an opportunity to be heard in their own defense.

Forty steamships have been chartered at Baltimore to load grain for ports of the United Kingdom before October. We will not let the people of England starve.

Hop lice multiply rapidly. An ingenious calculator in the hop growing district of Kent, England, has reckoned that in one season, between April 15 and Aug. 28, a single industrious female louse will have 10,000,000,000,000,000,000,000,000,000,000 lineal descendants.

COMMUNICATED

[We invite correspondence from every one in any way interested in the grain trade, on all topics connected therewith. We wish to see a general exchange of opinion on all subjects which pertain to the interest of the trade at large, or any branch of it.]

WILL BUILD ELEVATORS.

Editor American Elevator and Grain Trade:—We are contemplating the building of two or three elevators in the near future, and should be pleased to receive cuts and designs to assist us in making selections. We shall build our houses with from 8,000 to 10,000 bushels' capacity

Respectfully,
FAIR & SHAAK.
Sterling, Kan.

ALLOW WHEAT TO CURE IN STACK.

Editor American Elevator and Grain Trade:—We are now on the eye of a new wheat crop which is probably the best ever grown in the West. We expect to handle a good proportion of this crop, and are interested with the producer and grain dealers in securing it in the best possible condition.

Our observation has been, in years past, that wheat properly stacked after harvest and allowed to go through the natural curing process is more merchantable than when threshed and shipped to market directly after cutting. We believe it will be to the interest of all concerned that wheat be stacked, as unquestionably, if threshed from the shock, it will sell at a heavy discount under old wheat, as it will not be in condition for export.

With this end in view, we address ourselves to you, hoping that the readers of the AMERICAN ELEVATOR AND GRAIN TRADE will be advised to further this course.

Yours truly,
THE MIDLAND ELEVATOR CO.
C. T. Peavey, Pres.
Kansas City, Mo.

THE BEST REMEDY FOR WEEVIL.

Editor American Elevator and Grain Trade:—In referring to weevils in grain elevators and a remedy for exterminating them, I would say I have heard a large number of remedies recommended for the extermination of these pests and have tried several, and among the number I have tried I find the best one to be to keep your elevator clean and well lighted. Sweep frequently beams, braces or places where the insects can hide in the dark with a little dust. Keep all such places clean, and do not allow the dust to remain over six months at a time.

I have the supervision of two large elevators in this city, and my instructions to the foreman in each one are to sweep the bins every time they are emptied. In this way our bins get cleaned out thoroughly ten or twelve times in the course of a year, and we are not troubled with weevils. Another good remedy is to not receive into your house any wheat that is infested with them.

Yours truly,
D. S. BEALS.
Supt. Detroit Railroad Elevator Co.
Detroit, Mich.

FLAXSEED INSPECTION.

Editor American Elevator and Grain Trade:—I send herewith a certificate of inspection for a car of flaxseed. This was a small car of choice, clean seed that we had left of our sowing seed, the best of last year's crop, as dry as powder, as clean and sweet as any car of seed ever inspected in Chicago; and this is the certificate of inspection. Not: "Grade, rejected; damp and musty. The per cent. of impurity one and one-half. Weight per measured bushel 52½ pounds." Well, this is more than we can stand.

Respectfully,
JAMES PEERY & Co.
Humboldt, Kan.

[A representative of this journal called upon Flax Inspector Stevens July 11, and was shown a pound sample of this car of seed which had been on the shelf in the inspector's office since June 12 (the day the seed was inspected). A pound sample of every car inspected is marked and kept sixty days. The day this sample was examined by our representative it would have graded No. 1, yet that is not proof that it was not damp and musty when received at Chicago June 12. The seed had a dark, dull appearance as compared with different samples of other carloads, but no reliable conclusion as to the condition of the grain thirty days before could be ar-

rived at. The grain may have got out of condition in transit. A close car may have caused it to heat. Much rain could have entered car through open door or window or leaky roof between the point of shipment and destination. If shippers knew the large number of cars arriving at terminals with a door or window open, they would insist on employees being more careful. Whenever we can assist shippers sending grain to this market in unraveling any little difficulty of this nature we will be pleased to do so.—Ed.]

HIGH-BIDDING COUNTRY BUYERS.

Editor American Elevator and Grain Trade:—I hope that no other country dealer is or has been afflicted with as ignorant and unreasonable competitors as I have had during the past three years and expect to have for at least one year more. But in case any have had experience with such, I would be very thankful if they would inform me how they succeeded in overcoming the baneful effects of such competition.

Last year and the year before I had a competitor who frequently bought grain on the street at a price several cents more than the price then ruling on the St. Louis market less the freight to that market. He did this, too, on several lots for which I did not bid. I am confident that he did not get a lower rate on grain to St. Louis than I did. Neither did he go to any trouble to prepare his grain so as to sell to the best advantage, but shipped it just as he received it. The good, the bad, the clean and the dirty grain were all mixed together and shipped. The elevator he operated is not equipped with modern cleaning machinery, while mine contains a full line of the best appliances, and were successfully used to improve every lot of grain that entered my house.

In spite of this high-bidding competitor, I bought some grain, and made a little money, but a very little. At most it would not amount to a fair rate of interest on the money invested. I frequently talked to him, and tried to convince him that he was losing money and preventing me from making any, but to no purpose. He persistently outbid me, and thereby bought the greater part of the grain marketed here, although his house is small and handling facilities inferior.

I felt certain that he could not continue business long, so made the best of it, and awaited developments. He succeeded in keeping his head above water for two years and three months, when he failed. It was afterward made public that he was doing business on money supplied by a relative. He did not succeed in driving me out of the market, but he did make me run my business at a profit that barely paid my household expenses.

The worst of my trouble is that my old competitor has been succeeded by another reckless buyer, who is just as bad as the first. I am very weary of doing business for my board and washing, and if any of my brother dealers will suggest a practical way out of the difficulty, I will be exceedingly thankful.

Very truly,
OPPRESSED.

EXTERMINATING GRAIN WEEVIL.

Editor American Elevator and Grain Trade:—I notice in the June number of the AMERICAN ELEVATOR AND GRAIN TRADE that "Sangamon" asks in No. 65 of "Queries and Replies" for information regarding the use of carbon bisulphide as a means of exterminating insects in grain. Having had practical experience in this matter, I think I can give him some points about it that may be of use to him.

In the first place he asks how much should be used. For a wheat bin full of grain use 1½ pounds per ton of grain in order to make certain. When the bin is empty use about one pound per 1,000 cubic feet of space. For instance, in the case of a bin 20x20x20 feet, as given by "Sangamon," about eight pounds would be needed. A small room 10 feet each way would by the same rule require one pound.

As to the cost at wholesale, I would say it can be purchased in 50-pound cans for 15 cents per pound. However a much cheaper rate can be had from manufacturers. Edward R. Taylor, a chemist of Cleveland, O., sent me on my order 100 pounds for \$10.

This carbon bisulphide will kill all kinds of insects, bugs and beetles, and when thoroughly applied will destroy every one of them in the building, no matter where hidden. It is not so injurious to human life as some other vapors, but it is explosive when mixed with air, and therefore great care should be taken not to bring any kind of a light near while it is being applied. It evaporates so quickly that it can be thrown on any grain without injuring it in any way.

A much more deadly gas can be generated by putting a few lumps of potassium cyanide into a tin dish and pouring dilute sulphuric acid on it. The cyanogen gas thus generated is the most virulent poison known to chemists, and when inhaled is very speedy in its action. Potassium Cyanide is also exceedingly poisonous, and must be handled with care. Cyanogen should only be used when good reasons, such as danger from fire, prohibit the use of carbon bisulphide, naphthalene, or other combustibles.

The vapor of carbon bisulphide is heavier than that of air, and it naturally follows that when the liquid is thrown on grain, its vapor will sink down through the space between the kernels and so penetrate the whole bin. The bin or room must be very tight, the more nearly air-tight the better, otherwise the vapor will escape and be lost. After opening the can in which the bisulphide is received, no time should be wasted, but the contents should be at once scattered in the bins and the doors or covers closed as quickly as possible, and kept closed about twenty-four hours, to give time for the vapor to act and reach every corner.

The above is the method I followed with satisfactory results, and I have since had no trouble with insects of any kind. By keeping every part of the building clean, well ventilated and well lighted, the insects can be kept down, as they do not thrive in clean houses.

Respectfully,
T. C.

Queries and Replies.

Questions and answers are inserted under this head free of charge, and all are invited to avail themselves of this column.

No. 1. Automatic Scales Recognized by Law.—I am a firm believer in the accuracy of automatic scales, but I would be very much obliged to any reader of the AMERICAN ELEVATOR AND GRAIN TRADE who would tell me if automatic scales are recognized by law as being reliable. When grain is received in carloads and does not hold out, can I get reparation from the railroad company on the showing made by automatic scales?—JOHNSON.

No. 2. Shrinkage of Wheat.—In reply to Query No. 59, asking for information about the shrinkage of wheat in storage, I would say that wheat from the machine put into a dry bin will shrink about 5 or 10 per cent. under usual conditions, much, however, depends on the condition of the wheat when it is cut. When kept dry wheat does not shrink much after the first six months' storage. The size of the bin does not affect the amount of shrinkage as far as I know.—X. Y. Z.

No. 3. Who is Responsible for Delay in Transit.—When a shipper of grain quotes prices delivered and after selling ships promptly and the car is unduly delayed in transit by the railroad company so that the buyer refuses to receive it on arrival and the grain is resold at a loss, to whom can the shipper look for said loss? Has such a case been tested in the courts and with what result? Will some reader please answer through "Queries and Replies" and oblige—GRAIN DEALER.

No. 4. Running an Elevator.—I noticed a question in the June number of the AMERICAN ELEVATOR AND GRAIN TRADE by Boyd Bros. of Irvington, Ky., relating to elevator management. When a farmer brings in his wheat from the thresher to be stored, run the grain through the machine, and from the weight deduct 5 per cent. for shrinkage, the condition of the grain makes some difference in the amount deducted, however. Charges for storing grain differ somewhat. Grain is stored for periods of 10, 15 or 20 days for which ½ or 1 cent a bushel is charged; for succeeding periods the charges are one-half. As to whether the wheat is weighed before or after going through the separator, I would say usage varies; in some parts of the country the farmers allow the miller or warehouseman to run the grain through the separator first, in other parts the farmers would protest against having dirt, etc., taken out before weighing, and the elevator man does not attempt to do so. In such cases the grain is cleaned when it arrives at the terminal elevator, where it is docked for dirt.—B. H.

SMUT FUNGI.

Dr. Oskar Brefeld, professor of botany in Munster, has given many years to study of the smuts of the various cereals—wheat, oats, barley, rye, corn, sorghum, etc. The practical results of his prolonged labors have been given to the world in an address before the Society of Agriculturists of Berlin. A translation of the published address by Prof. E. F. Smith appears in the *Journal of Mycology* of the division of Vegetable Pathology of the United States Department of Agriculture, from which many of the facts herein stated have been drawn.

The time of year is now approaching when smuts may be looked for. Unlike the rusts they, as a rule, are confined to the heads or fruiting portion of the grain, and therefore are not conspicuous until the grain begins to develop its flowers into grain. That the reader may have a pictorial representation of the subject before him, several forms of smut are presented in the accompanying engraving. At 1 is a spray of oat smut; 2 wheat, and 3 a smutted ear of corn. These figures are not, of course, drawn to the same scale. In order better to understand other parts of the engraving, it may be said that smuts are minute plants, so small as to require the high powers of the microscope to be seen. They prey upon the grain plants, sending their vegetative filaments into the substance of the host supporting them. Therefore the smut fungus consists of two portions, namely, the threads, usually colorless and therefore not seen unless looked for with great care, and the bodies, known as spores, which are minute and spherical and in mass constitute the smut as seen by the naked eye. Fig. 4 shows the tips of two such threads, and in them the spores are beginning to form, as shown by the small spherical masses near the center of the threads. At 5 is seen a more advanced stage of the spore formation, while at 6 two spores are shown free and two below with the tubes, formed in germination, united. At 7 is seen a spore that is germinating by producing a number of smaller spores end to end, which are able to start new colonies elsewhere.

There are several kinds of smut, and the one shown at 9 is known as the stinking smut, a grain thus smutted being shown at 10, both whole and in cross-section, the whole interior of the grain consisting of a powder with an offensive odor. A healthy grain, whole and in section, is shown at 8 to illustrate the difference in size and shape between the good and the smutted grain. At 11 and 12 is shown the formation of the spores of this smut, while other forms with larger and more complicated spores are seen at 13 and 14.

Bear in mind that in smuts we have low forms of vegetation in which the greater bulk of the parasite consists of slender, invisible threads; that from these multitudes of spherical bodies, usually of a dark or brown color, are produced, that constitute the smut as ordinarily seen, and last but not least, these spores are able, when free from the grain plant or any other, to germinate and produce multitudes of sprout spores, which in time may reproduce themselves for many generations. With these facts the reader is prepared for the conclusions which Dr. Brefeld has obtained through many years of most elaborate and painstaking research.

Until his researches were under way, it was generally considered that the smuts could live and grow only upon the plants known to be infested by them. Dr. Brefeld was brought to the conclusion that while smuts did flourish upon various plants they were not limited in their growth and existence to them. This is a point of no small consequence, for if the smut fungi can grow elsewhere than upon the grain, attempts must be made to eradicate it in all of its stages of growth. As with insects, where it is sometimes in one stage and sometimes in another that the pests can be easiest destroyed, so it is with the polymorphic fungi. Thus by artificially growing the smut spores, not in water, for in it they often fail, but in nourishing liquid media (nutrient solutions) Dr. Brefeld was able to gain an insight into the nature of a form of the smut fungus, at once interesting to the botanist and of practical importance to the crop grower. The form of the smut fungus as grown in the nutrient solutions was found to correspond with the fungi found in fresh dung, and their identity was established by sowing smut spores in fresh dung. This gave an explanation to the long known fact that fields spread with fresh dung were especially liable to attacks of smut. This discovery that smut cannot only exist, but multiply with great rapidity, in fresh dung, points out a center of infection outside of the plant that needs to be guarded against. Having established the form of the smut fungus and the

condition under which it thrives outside and free from any living plant, it still remained to prove how and when these sprout spores attacked the grain and established upon it the smut parasite. With the ability to grow the sprout spores abundantly in nutrient solutions, Dr. Brefeld found the smut germs within easy reach, with which to experiment as to their method of attacking the plants susceptible to the respective smut.

The experiments were carried out with the smut of oats and barley (*Ustilago carbo*), the millet smut on sorghum (*Ustilago cruenta*) and the smut of corn (*Ustilago maydis*). With oats, the results are as follows: The most fatal results are obtained with young seedlings. The infection is fruitless after the inner leaves have pushed a little through the sheath leaf. Plants older than this are proof against the infection. The spread of the smut is greatly increased by spreading fresh dung upon the earth. This influence of the dung is lost with age. Old rotted manure is not injurious. As a rule, smut germs that have lived a year outside the host lose their infective power. It follows, without further argument, that fresh dung is not advantageous to use upon grain fields. It is also of importance that with oats, the period in the life of the seedling when infection can take place



SMUT FUNGI.

is only a brief period, and this once past the oat plant is proof against attack.

With corn the results are quite different from those with cereals like oats, in which the smut is confined to the grains, for with the former any young tender part of the plant may become affected by inoculation. With the oat the germ enters the seedling near the sheath and remains unobservable until the plant is sexually mature, when the parasite manifests itself in the head; but in case of the corn the work of the parasite is more local, and may break out in spore pustules in leaf, stem or ear. If other parts of the oat plant than the base of the stem (root nodes) are susceptible, they do not produce spores. The corn plant may become inoculated for a long time, in fact, until fully grown.

Dr. Brefeld's method of treating plants was by means of an atomizer loaded with the sprout spores grown in nutrient solutions. He sowed his seeds of the smut in a wide range of selected places with the above results. The spore generation, produced free from the cereal, was able to effectively inoculate, so that the two branches of the experiment were carried out at the same time. The practical bearings of this work have been pointed out in the body of this brief paper.—*Country Gentleman*.

Bill Erwin, who has been assisting in the elevator investigation, wants the state to pay him. He was engaged by the Wheat Growers' Association, an organization of men who have mainly farmed around the hotels in St. Paul, who were determined to get him a job. They came very near getting the fragrant Eric Olson a job too. —*Argus, Todd Co., Minn.*

Trade Notes.

An advertisement judiciously written, displayed, and if necessary neatly illustrated, appearing in a proper medium, will sometimes suffice to make success certain.

Advertisers will confer a favor by reporting for publication in this department any changes in firm, business or manufacturing plant, or any other news of interest to readers.

Fairbanks, Morse & Co. have been incorporated at Chicago, to manufacture scales and machinery; capital stock, \$1,000,000; incorporators, Charles H. Morse, C. A. Sharpe, W. E. Miller.

The Columbian Scale Company has been incorporated at Chicago with a capital stock of \$200,000, to manufacture automatic scales; incorporators, C. M. Lilcomb, G. F. Kimball and M. L. Osgood.

Whoever would successfully conduct a line of advertising should devote great care and attention to the preparation of the advertisement to be used. Money expended in getting started right is judiciously expended.

Advertising, like the holy state of matrimony, is not to be entered into thoughtlessly. It is a serious, a weighty matter. It means an expenditure of thought, time and money. It is the very lungs of business, and they must be kept in a state of perfect health to bring in and out perfect breath in the shape of money.

An Indian makes a good advertisement for a cigar store, but it won't do for a manufacturer of elevator machinery. You can attract attention by an advertisement badly worded and arranged with conspicuously bad taste, but a good advertisement properly constructed and displayed attracts favorable attention and produces an impression that is advantageous to you and your business.

Has it ever occurred to you that you might profitably increase your present volume of business by doing a little more advertising with the idea of reaching the consumer? Take some special brand of goods which you honestly believe possesses merit, and push it with a moderate amount of advertising in widely circulating journals. If done judiciously, you will soon begin to realize results in the form of increased orders through the trade.

EXPORTS AND IMPORTS OF SEEDS.

We exported in May 5,576 bushels of flaxseed, valued at \$6,245; 324,615 pounds clover seed, valued at \$24,108; 126,290 pounds cotton seed, valued at \$1,373, and 337,992 pounds of timothy seed, valued at \$11,926, against 10 bushels of flaxseed, valued at \$10; 744,787 pounds clover seed, valued at \$45,682; 560,486 pounds cotton seed, valued at \$8,750, and 537,527 pounds timothy, valued at \$18,951, in May, 1890. The exports of seeds during the eleven months preceding June were 112,615 bushels flaxseed, valued at \$147,406; 20,374,168 pounds clover, valued at \$1,545,321; 9,986,694 pounds cotton seed, valued at \$83,421, and 8,602,676 pounds timothy, valued at \$364,866, during the same period of 1889-90.

The exportation of flaxseed was resumed in May, after an intermission of five years, and the prospects are that large shipments will be continued.

The imports of flaxseed during May aggregated 57,912 bushels, valued at \$61,626, against 247,077 bushels, valued at \$273,498, in May, 1890, and during the eleven months up to June we imported 1,503,432 bushels, valued at \$1,650,035, against 2,099,700 bushels, valued at \$2,501,846, during the same months of 1889-90. We exported one bushel of foreign flaxseed, valued at \$2, in the eleven months ending in May, 1891, and none in the fiscal year previous.

A grain of wheat has sprouted in the forehead of a 5-year-old boy near Salem, Ore. On May 15 little Thomas Stretch, the son of Miller Reeves A. Stretch of Lower Alloway township, was quite seriously injured by being caught in a belt at the mill, and would have been killed but for the promptness of his father in stopping the machinery. He has now almost recovered from the effects of the accident, but a few days ago a dark spot was noticed over his eye. It was carefully opened with a lance, and was found to be a grain of wheat, which was sprouted. The grain was probably forced under the skin when his head struck a bin while he was being whirled around the shaft.



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MITCHELL BROS. COMPANY.

(INCORPORATED.)

— OFFICE —

Howland Block, 184 and 186 Dearborn St.,

CHICAGO, ILL.

Subscription Price, - - - \$1.00 per Year

English and Foreign Subscriptions, - - 1.50 " "

English and Foreign Subscriptions may be sent to W. H. Smith & Son, 186 Strand, London, W. C., Eng.

A. J. MITCHELL, - - - Business Manager.

HARLEY B. MITCHELL, - - - Editor.

ADVERTISING.

This paper has a large circulation among the elevator men and grain dealers of the country, and is the best medium in the United States for reaching this trade. Advertising rates made known upon application.

CORRESPONDENCE.

We solicit correspondence upon all topics of interest connected with the handling of grain or cognate subjects.

CHICAGO, ILL., JULY 15, 1891.

EXPORTS OF THE CROP YEAR.

The exports of breadstuffs for June, the last month of the crop year, were, according to the report of the Bureau of Statistics, valued at \$13,199,494, against only \$10,835,011 for June last year. The exports during the first six months of this year were valued at \$68,350,265, against \$82,039,683 for the same months of 1890, and the exports for the twelve months ending with June were valued at \$123,156,478, against \$150,690,033 for the preceding twelve months; a difference of \$27,500,000 in favor of the crop year of 1889-90.

The exports of wheat, however, exceed the exports for the preceding year when the crop was over 90,000,000 more than in 1890. The wheat exports for June amounted to 6,795,891 bushels, valued at \$7,209,062, against 3,266,317 bushels, valued at \$2,932,347 for June, 1890, and during the twelve months ending with June, 54,201,282 bushels, valued at \$50,493,537, were exported, against 54,110,942 bushels, valued at \$45,031,173, for the twelve months ending June 30, 1890. A small increase in quantity, but a large increase in value.

More wheat flour was exported during June than during the preceding June, but the exports for the year were over 800,000 barrels less, being only 11,007,638 barrels, valued at \$53,116,384, for the year ending with June. Despite the poor crop, our exports of raw and manufactured wheat products have decreased less than 8,000,000 bushels. The coming crop year will bring with it a large increase in the exports of wheat and wheat products, but as to corn all is yet uncertainty.

The corn exports in June amounted to 2,804,286 bushels, valued at \$1,880,583, against 7,779,752 bushels, valued at \$3,279,630, in the same month of 1890; and the exports for the crop year amounted to 29,894,380 bushels, valued at \$17,124,370, against 100,905,494 bushels, valued at \$42,205,024 for the preceding crop year.

The barley exports in June aggregated 112,203 bushels, valued at \$76,104, against 25,777 bush-

els, valued at \$13,636 in June, 1890; and in the crop year the aggregate was 966,079 bushels, valued at \$664,708, against 1,394,464 bushels, valued at \$749,455, in the crop year of 1889-90.

The exports of rye for the month of June were 9,827 bushels, valued at \$8,750, against 294,509 bushels, valued at \$175,296 for June last year; and during the crop year we exported 332,739 bushels, valued at \$212,161, against 2,257,356 bushels, valued at \$1,279,800, during the crop year of 1889-90.

The exports of oats in June were 18,917 bushels, valued at \$10,751, against 2,720,640 bushels, valued at \$967,576 in June, 1890; during the crop year just ended we exported 916,323 bushels, valued at \$389,078, against 13,248,516 bushels, valued at \$4,382,628, during the previous crop year.

CARRIERS MUST PAY FOR SHORTAGES.

The Supreme Court of New York has recently decided a case against a carrier that made good a shortage of 850 bushels of wheat, and then tried to recover the amount paid. It is not often that railway companies make good shortages in grain shipments, and in this case it was a steamboat. It carried a cargo of wheat from Duluth to Buffalo, and was short. At present the lake grain carriers depend entirely upon the elevators for weights, but a few such losses as the one cited in the foregoing will compel the lake transportation companies to weigh all grain as it is loaded into the boat, or have an agent present when the weighman in the elevator weighs the grain to be placed in the shipping bins.

The decision may also encourage shippers sending grain by rail to push their just claims against the railroad companies, and make the carriers pay for grain scattered along its track by leaky cars and lost by loose methods of handling at terminals. Shippers can and should compel carriers to deliver every bushel received. Few are the shippers that do not lose more than a carload of grain by shortages in the course of every year. This point is covered by different laws, and shippers can secure immunity from this imposition if they desire.

THE REGULAR AND THE IRREGULAR.

Country elevator men and regular grain dealers are deprived of much business every year during the busy period by transient buyers, who float about the country, buying here and there. Like the farmers, they load direct from wagon to car, ship the good with the bad and detain cars as long as possible.

As a rule, these scalpers have no business standing whatever, are unreliable, and many of them are tricky and dishonest. They buy in one place one week, and in another the next. They have no business honor to maintain and no impetus to deal honorably with the farmers, for they give no consideration to future business. Nothing ties them to one place. After the farmers of one market have learned a scalper's tricks, and refuse to deal with him, he can go to another market and catch more sheep to shear.

His departure does not end the trouble of the regular buyers, for other scalpers of the same type succeed him. The regular buyers not only lose the business he secured, but also have the pleasure of being branded for the tricks of the scalper. The farmer does not distinguish between regular and irregular buyers, but charges all dealers with the tricks of the scalpers.

Grain dealers as a class are as honorable as any other class of merchants, but are charged with all kinds of tricks by discontented farmers, who magnify their wrongs and build houses of their own. The unreliable scalper, without reputation to maintain, is responsible for much of this.

This should not be. Dealers who invest their capital in providing facilities for handling the grain to be marketed at a station are rightfully entitled to the business, and some way should be

provided for doing away with the scalper and the stigma his dishonorable acts place upon the members of the grain trade. Country grain dealers should organize, and ask the grain receivers' associations at the different grain centers to buy only of regular responsible dealers. In this way the business of the scalpers can be greatly reduced.

A SUCCESSFUL ASSOCIATION.

The Illinois Grain Merchants' Protective Society has grown so large during the past year that it was considered necessary to give Secretary Marston an assistant. The work will be pushed with renewed vigor, and every effort made to advance the interests of members. No dealer in the state can afford to remain a non-member.

The new plan of levying assessments is as equitable as any that could be proposed. It provides that assessments shall be made according to the annual shipments, which is as fair for the large as the small shippers. This is one of the most active and most successful associations in existence. Dealers in other parts of the country can profitably follow the example of Illinois merchants in the organization of strong, active associations.

WORKING FOR IMPROVED FACILITIES.

The Toronto Board of Trade has recently adopted a scheme for meeting the difficulty of making track deliveries and weighing grain in that city, that could well be championed by the commercial exchanges of American grain centers.

The Board has decided that a joint central elevator, with bins capable of holding single carloads, should be erected by the railroad companies entering that city, and a committee has been appointed to convince the railroad managers of the necessity of erecting such an elevator immediately. The Board proposes, however, that the elevator shall be used, and resolved that all grain for local use shall be run through the elevator and weighed before delivery, and that a weighing charge of one-fourth of a cent a bushel be considered as fair remuneration to the companies for this service, exclusive of the weighmaster's fees. The office of inspector and weighmaster will be combined.

In such an elevator receipts will not be docked for future shrinkage. The railroad companies can unload their cars upon arrival, and blockades and car famines will be prevented. Shippers will not be compelled to sell quickly to avoid a demurrage charge, but will be given four or five days to dispose of their grain. The elevator will prove profitable to all concerned.

The Toronto Board of Trade is also laboring with the railroads in the interest of another improvement in grain handling facilities, and that is the building of transfer elevators at junction points for the weighing of grain loaded at outside points, and not destined for Toronto. All grain transferred from one road to another should be weighed in a transfer house. Shippers should make a determined effort to secure the erection of more transfer houses in this country.

THE Chicago, Milwaukee & St. Paul Railway Company is defendant in another suit for breach of contract with Chicago elevator men. Some years ago the railway company contracted to deliver a million bushels a year to the St. Paul and Fulton elevators, erected according to agreement in the company's yards in Chicago. It has repeatedly failed to do this, and has been successfully sued by A. M. Hoyt and others for damages at the rate of one cent per bushel for every bushel less than the amount it contracted to deliver annually. The plaintiffs have won two or three suits against the company on this score, and will undoubtedly win this one, which is for \$50,000. The railroad company also contracted to buy the elevators after a certain time, and this part of the contract will be insisted upon by the present owner of the two elevators. Carriers do not always have their own way.

PUBLIC ELEVATORS AND INSPECTION FOR KENTUCKY.

Kentuckians seem to be set upon adopting a new constitution, and one of the sections of the proposed constitution is causing much talk among the warehousemen of Louisville.

The section which is causing the agitation is section 214, which provides that all elevators, or storehouses where grain or other property is stored for a compensation, whether the property stored be kept separate or not, are declared to be public warehouses, subject to legislative control, and the General Assembly shall enact laws for the inspection of grain and other produce and for the protection of producers, shippers and receivers of grain and other produce.

The establishment of public warehouses and state inspection of grain in Kentucky would cause an important change in the grain trade of Louisville, and it might affect the trade of other cities, but that will depend entirely upon the action of the state legislature. Covington and Newport would probably be included, as the grain could then be handled by the members of the Cincinnati Chamber of Commerce.

It is extremely doubtful, however, if state inspection would be of benefit to the state, for it now produces hardly enough grain to supply the home demand and is not likely to have grain for export for years to come, if ever.

COMPLAINT has been filed with the Iowa Railroad Commission by citizens of Wellsburg against the Burlington, Cedar Rapids & Northern Railroad Company. It is claimed that the company gives J. A. Carton & Co. a monopoly of the elevator business at Wellsburg and Cleves, and will not let C. Primus and A. G. Geerder have ground at Wellsburg upon which to erect an elevator. It is reported that the attorney general will commence suit to have the company grant ground for the erection of an elevator. The right of a railroad company to say how many elevators shall be built at stations on its lines and who shall build them is a much debated question. Most of the companies will see to it that facilities sufficient to handle all the grain marketed at a station are provided. In case a company does not voluntarily do this it can be easily forced to do it.

THE DULUTH INVESTIGATION ENDED.

The investigation of the infamous charges made against the proprietors of Duluth elevators has been suspended until next January, and practically it has been ended, for the foul charges made by the aspiring demagogues have been refuted by the report of the experts appointed by the investigating committee, and the many lies disgracefully sworn to by Alliance witnesses before the star chamber committee have been acknowledged false upon cross-examination or conclusively proved to be false by a host of reliable witnesses.

A full review is given elsewhere in this issue of this—the most scandalous affair that has yet had its origin in the ranks of the Alliance. Either the Alliance instigators of this investigation started it solely for political purposes or else the prime movers in their anxiety to make a show of doing something for the farmers became easy dupes for the unprincipled tricksters who wanted a job. The opposition of the first committee to hearing anything in defense showed that its members were firmly determined to convict. Such bigotry and unfairness might have been looked upon with favor in the dark ages, but we will have none of it in America of to-day. The investigation ended, not in the conviction of the elevator men, but in stigmatizing the star chamber members as dishonorable and the star chamber witnesses as unprincipled tricksters and ignominious liars. The elevator men have not only been cleared of every charge made against them, but every suspicion of crime has been driven away from the minds of all fair-minded persons. But this is not all, it has been proved that they acted

as honorable in the matter investigated as is possible for human beings to act. They not only sacrificed their law-given right to post the bin-burnt grain but paid for it at a cost of nearly \$100,000. The investigation has proved directly to the interest of the elevator men. Nothing could have occurred to place them higher in public esteem or give them a firmer hold on public respect.

THE special committee on bills of lading of the Western Freight Association has prepared a new bill of lading and recommended its adoption. It provides that demurrage shall be at the rate of \$1 per car for each twenty-four hours or fraction thereof and that when property is destined to point beyond receiving company's line it is expressly agreed that the responsibility of this company for loss or damage shall cease on delivery in good order to the connecting carrier. The legal remedy shall be against the particular carrier or forwarder in whose custody the property may be when loss or damage occurs. It is doubtful if shippers can be forced to accept this bill of lading. The receiving carrier should be held responsible for the safe delivery of freight at destination. Shippers cannot run all over this great land to sue railroad companies for damages.

WAREHOUSE LAW FOR KANSAS.

The warehouse law enacted at the last session of the Kansas Legislature, part of which is published in this issue, is indeed a remarkable piece of legislation in that the professional agriculturists assisted in making the law, yet it bears none of their finger marks.

It covers the ground more equitably and thoroughly than any warehouse law passed during the past few years. It deals justly and fairly with all concerned, and does not contain unconstitutional provisions.

Surely the framer thoroughly understood his business, and kept constantly in mind the real thing desired. Prejudice and narrow mindedness are nowhere present in the law. It is only fair to say that this law did not originate in the branch of the Kansas Legislature controlled by the Alliance cranks. It is truly a wonder that it became a law in its present condition.

No houses of less than 75,000 bushels' capacity can become public elevators, so that country elevator men can, if they so desire, accommodate the producers by storing their grain for a small compensation, without taking out a license and filing a bond, as is required by the Nebraska law. The provision for the bond, too, is better than that made in either the Missouri or Nebraska laws, which provide that it shall be \$10,000 in all cases. The Kansas law provides for a bond of \$10,000 to \$50,000, which virtually leaves the amount to be fixed by the Board of Trade issuing the license.

GRAIN SPECULATION IN RUSSIA.

Quite a batch of grain news comes from Russia. The short crop there has been the occasion of much activity on the part of the government. The railroad administration has for some time sought to protect the farmers against the middlemen by acting as a grain growers' bank. Now it is stated that a bank with a capital of 75,000,000 roubles will be established to regulate the Russian export grain trade. As the latest reports show that Russia will have no grain to export, and will probably have to import foreign grain, the necessity for the bank just now is hardly apparent.

On top of this comes a report that the "government has forbidden speculation in grain." What is hoped to be gained by such a course is difficult to see. If it be true that Russia needs grain from without, nothing can be gained by forbidding capital to speculate. If grain must be imported, the year's prices would probably be lower with speculative activity than without it; for capital would import grain and ultimately reduce prices by adding to the supply. Besides, forbidding speculation is one thing; compelling people to sell is another. Even an autocratic

government will find it difficult to regulate commercial transactions by mere edict.

THE GRAIN DEALER AS AN ADVERTISER.

Country grain dealers do not, as a rule, advertise their business very extensively, yet many keep their name and business constantly before the farmers by compiling and publishing a market report in the weekly newspaper, which invariably has a larger circulation among the farmers than the daily.

It cannot be denied that this is an excellent plan. Every week when the farmer receives his paper he will involuntarily read first the grain dealers' market report. He may not read the line at the top or bottom of the report every time, but he knows who compiled it and is reminded of the dealer who did it.

Many dealers make no effort to secure new business by keeping their name before the farmers in the newspapers, others earnestly solicit business in short well-worded reading matter advertisements, while some publish small cards or display advertisements of medium size. Here is one that has been published in a Western weekly for a long time:

JAS. S. ROWE,

The New Buyer

— and owner of —

THE ELEVATOR,

— PAYS THE —

Highest Prices for all Kinds of Grain.

Mr. Rowe has been a "new buyer" for a year and has competitors who have been buying at the station for many years. He seeks to make producers familiar with his name, location and business, which every dealer can do with profit. Another dealer announces the fact that he "keeps his elevator open the year around, and always pays the highest market price for all kinds of grain." A Washington dealer informs the farmers that "If you do not want to sell your grain at this station, have it thoroughly cleaned and shipped from my elevator. The cost is trifling." An Iowa dealer, in addition to his name, has painted on his elevator in large letters, "THIS HOUSE IS ALWAYS OPEN."

Farmers do not always market their grain at the same station. A word from an acquaintance, an advertisement or the personal solicitation of a dealer frequently induces them to sell their grain in a new and untried market. The oftener the farmer sees the name of a dealer the better acquainted will he feel. Like all other men, the farmer prefers to trade where he is acquainted and generally does so. An advertisement in a newspaper the year around gives the dealer an air of reliability, gains many new acquaintances for him among the farmers, and shows that he is permanently established in the grain buying business.

THE members of the Grain Buyers' Association of Alton, Ill., organized a social club at a recent meeting, but a few farmer agitators got wind of the meeting and spread the report about that the buyers were trying to fix prices, and that the meeting was one characterized by dissension and discord. The meeting was open to the public and nothing of the kind occurred. The agitators feel compelled to manufacture all kinds of excuses for existing.

THE sheet published by that Prince of Demagogues Senator Pfeffer, says the Alliance of Harper county, Kan., sets a worthy example which should be followed by every farmers' organization in the state. This "worthy example" is the passage of a resolution to the effect that the farmers should hold the wheat crops off the market until they can realize \$1 per bushel, or until such time as the committee shall recommend sale of the same. When a United States senator, who is supposed to represent a state, not a class of cranks, advises the producers to corner the wheat market, he ceases to labor in the interest of the people.

Grain Dealers' Associations.

KANSAS AND NEBRASKA GRAIN DEALERS' ELEVATOR ASSOCIATION.

President, MASON GREGG, Lincoln, Neb.; *Vice-President*, FRANK LOWER, Council Grove, Kan.; *Secretary*, W. T. CAYWOOD, Clifton, Kan.; *Treasurer*, O. A. COOPER, Humboldt, Neb.

GRAIN SHIPPERS' ASSOCIATION OF NORTH-WEST IOWA.

President, T. M. C. LOGAN, River Sioux; *Vice-President*, H. HANSON, Odebolt; *Secretary and Treasurer*, F. D. BABCOCK, Ida Grove; *Assistant Secretary*, F. G. BUTLER, Schaller.

Executive Committee, E. A. ABBOTT, Des Moines; J. Y. CAMPFIELD, Sac City, and T. M. CATHART, Kingsley.

ILLINOIS GRAIN MERCHANTS' INSURANCE AND PROTECTIVE SOCIETY.

President, H. C. MOWREY, Forsythe; *Secretary and General Manager*, S. K. MARSTON, Onarga; *Vice-President*, EDWIN BEGGS, Ashland; *Treasurer*, E. R. ULRICH, Jr., Springfield.

Executive Committee, E. F. NORTON, Tallula.
Committee on Claims, W. B. NEWBIGIN, Blue Mound.

GRAIN DEALERS' ASSOCIATION OF OHIO.

President, E. C. WAGNER, Columbus, Ohio; *Vice-President*, E. M. BENNETT, JR., Urbana; *Secretary*, E. W. SEEDS, Columbus; *Treasurer*, J. W. McCORD, Columbus.
Board of Managers, J. C. HANNUM, Duvals; J. W. JONES, Radnor; J. P. McALLISTER, Columbus; J. W. WOLCOTT, Conover, and N. R. PARK, Ada.

Legislative Committee, J. W. McCORD, D. McALLISTER, E. W. SEEDS, E. C. WAGNER, W. A. HARDESTY, and E. C. BEACH.

Good cotton is raised in Southern Kansas in the vicinity of Cherryvale.

The Minnesota State Grain Inspector paid over \$10,500 for fees received during May.

Vernon county, Mo., has 43,000 acres of flax, which will yield eight bushels per acre.

Great damage was done to crops in Audubon and Shelby counties, Ia., by a hailstorm July 2.

Reports of ravages by grasshoppers at Fergus Falls, Minn., have been greatly exaggerated.

Prairie fires have destroyed several thousand acres of grain in the vicinity of Milton, Ia., recently.

A new Missouri law makes speculative contracts in grain, gambling contracts and uncollectible by law.

The Puyallup Valley, Wash., is the best hop region in the United States and produced 50,000 bales in 1890.

The first new barley received at San Francisco was three carloads, which arrived from Fresno county June 6. It was sold at auction for \$1.42½ per cental.

The farmers of Washington county, Minn., have declared their intention of supporting the state binding twine factory at Stillwater by paying, if necessary, 3 or 4 cents more per pound.

The exports of broom corn for May were valued at \$27,613, against \$9,764 in May, 1890; and for the eleven months up to June \$149,269, against \$97,971 for the same months up to June, 1890.

An unseen enemy is operating in the corn fields in some localities of Eastern Pennsylvania. It is a bug which is said to work under ground, inserting its proboscis into the young plant and extracting the juice.

The fifth annual corn palace festival will be held in Sioux City, Oct. 1 to 17, inclusive. The secretary, J. R. Kathrens, promises that the corn palace will be the grandest and handsomest structure yet conceived.

Crookston, Minn., will give a bonus of \$500,000 to the Duluth & Winnipeg Railway, provided that the company builds to that city and carries wheat to Duluth at 7 cents a bushel and coal from Duluth at \$2.50 per ton.

The genuine Rocky Mountain locust has made his appearance in Grand Forks and Walsh counties, N. D. A deep ditch has been dug around them and attempts will be made to trap them before they get their wings.

The California wheat crop is large in quantity and excellent in quality and is estimated at 1,000,000 tons, against 900,000 tons last season. The yield of barley is expected to be 300,000 tons, against 200,000 tons last year.

EDITORIAL MENTION

SEND us news of your district that will interest our readers.

A VERY useful device in the shape of a sliding scale will be introduced to readers of our August number.

GRAIN shipments from Duluth to Buffalo by lake continue to be short, and the weighmen at each port place the blame upon those at the other. Why is it?

If you have anything to say to elevator men or grain dealers, use the columns of the AMERICAN ELEVATOR AND GRAIN TRADE. It is the only journal published in their interest.

WITH this issue we begin Volume Ten of the AMERICAN ELEVATOR AND GRAIN TRADE. An excellent time for non-subscribers to have their names added to our subscription list.

DO NOT be backward about expressing your opinions or giving your experience in the columns of this journal on any subject that will be of interest to our readers. We solicit communications from all connected with the trade.

A FREIGHT claim bureau has been established in New York for securing the prompt and equitable adjustment of claims against transportation and elevator companies. Such a bureau could be of great assistance to Western shippers.

WE will soon add to our list of "Valuable Books for Grain Dealers" a set of tables for wheat dockage showing the net bushels and pounds, in any quantity up to 100,000 pounds less dockage of from one pound to five pounds per bushel.

THE E. H. Pease Manufacturing Company of Racine, Wis., write us: "We are *bang full* of business, and accord more credit for it to the AMERICAN ELEVATOR AND GRAIN TRADE than to all other advertising mediums we patronize, combined."

THE Illinois Legislature has adjourned, and none of the many bills introduced which would have affected the grain trade had they become laws were passed, save the one relating to the liability of grain inspectors. This was championed by the Railroad and Warehouse Commission.

A NEW illustrated catalogue of grain and flax separators and elevator supplies has been issued by J. L. Owens & Co. of Minneapolis, Minn. It contains a complete description and price of the elevator supplies manufactured by this firm, and should be in the hands of every elevator man in the country.

WE have received a new illustrated catalogue of the Eureka Grain Cleaning Machinery, including an illustrated description of where and how it is made. A complete description with price is given of the Eureka Separators, Scourers Clippers and other machinery. Copies can be obtained by writing to S. Howes, Silver Creek, N. Y.

THREE regular lines of steamers have been established to run between Newport News, Va., and European ports. Already room has been chartered for large shipments of grain and flour. The Chesapeake & Ohio Railroad Company is the moving spirit in the enterprise, and will make a strong effort to draw export traffic that way. The

unreasonably heavy charges connected with sending grain by way of Buffalo and New York City will be a potent influence in diverting grain to this route.

If the National Government cedes its 800,000,000 acres of arid land to the states in which it is situated, and it is reclaimed and utilized in the production of grain, our grain producers will be able to supply the home demand for at least eight years and eight months more, despite the fact that statistical fiends insist we will have to import breadstuffs within five years.

THE National Transportation Association should eliminate the words "subject to correction" after the word "weight," in the proposed uniform bill of lading. Grain shippers are entitled to, and always have contended for a clean bill of lading. If grain shippers will strenuously object to these words in the proposed form, they may succeed in having them erased.

CHICAGO dealers have surprised themselves, Eastern dealers and several railroad officials by going into Southern Illinois and Indiana and buying wheat to be shipped to Chicago. Heretofore the bulk of the wheat shipped from this territory has been sent East. Chicago dealers will next take to establishing permanent agents at Western points if this fit of enterprise continues.

SOME of the Grange associations of the New England states are said to be buying grain by the carload direct from the members of the Alliance in the West without the intervention of the much disliked middleman. The effort to do away with the middlemen always has, and ever will, prove futile. The farmers are very slow to learn. Two or three carloads bought direct will make no material difference either way.

THE floating elevators of New York harbor, or rather all but two of them, will hereafter be controlled by one company. The consolidation of the different companies is said to be in the interest of economy and better service, which we trust is true. Combinations made for the purpose of levying a tax upon our export grain trade as it passes through New York state, serves only to increase the trade of other ports.

IN Catalogue E, just issued by the A. P. Dickey Mfg. Company of Racine, Wis., attention is called to the fact that the grain cleaner has been in use in this country for over one hundred years, and that grain cleaners have been made by some members of the Dickey family for over a century. The catalogue contains a full illustrated description of the mills and separators made by this firm. Copies will be sent upon application.

If something is not done soon to stop the destructive parasites and diseases which are killing our grain-destroying insects, these pests will become things of the past, known only as extinct species. The latest addition to the list of parasites is a red insect which is giving the grasshoppers a red-hot reception in California. The Hessian fly parasites imported from Europe are destroying many fly eggs at the Illinois experiment station.

A MEMBER of the Chicago Board of Trade was recently expelled from the Board for manipulating grain after it had been inspected by the state inspector and certificates of inspection issued. During April this member bought nine carloads of No. 2 oats, and at different times sent the cars to a private warehouse where about one-third of the oats was removed and screenings substituted therefor. This mixture was sold as No. 2 oats. Chief Inspector Price detected the fraud and called the attention of the directors of the Board to the matter. An investigation was instituted with the result that the guilty member was convicted and expelled. The penalty was too light. Such tricksters deserve to be punished to the full.

extent of the law, as well as according to the rules of the Board.

CINCINNATI grain dealers have petitioned the Central Traffic Association for a lower rate on wheat East bound from that city. The dealers in the territory of this association west of Pennsylvania are sorely in need of a lower rate.

MICHIGAN'S 3-cent bounty on sparrows has resulted in a marked decrease in the number of these fighting destructionists in that state. The small boy is becoming a good marksman, and money is kept in circulation. Other states can profitably follow the example of Michigan and Illinois in this matter.

THE railroad companies of North Dakota have been requested by the railroad commissioners to erect car detaining platforms at country stations so that farmers will be enabled to load their wheat into cars from their wagons. The farmers tried to pass a law compelling the railroad companies to do this, but failed.

A GRAIN dealer at Wolcott, Ind., has secured judgment for \$12,000 against the Chicago, Pittsburg & St. Louis Railway Company for discriminating against him by refusing to furnish cars to ship grain. Public carriers, like public warehousemen, must treat all patrons alike. Discrimination is unlawful, and will not be tolerated.

SECRETARY MOHLER of the Kansas State Board of Agriculture has issued a report which gives the calamity-shriekers lock-jaw. He reports the wheat crop of that state as 54,307,965 bushels, of which 2,222,175 bushels is spring wheat. A calamity liar out of a job is a wretched thing to look upon, but a pleasant thing to think about. It is sweet to meditate upon the necessity of his working something besides his jaw.

THE prospects are that the railroads centering at Kansas City will establish a joint grain agency at that point and allow the reconsigning of grain originating upon the lines west of the Missouri River at proportionate rates. Rules have already been adopted by one association and changed to suit the Kansas City grain dealers. The prospects are that the railroad managers will facilitate the enlarging of Kansas City's grain trade and the grain men are happy.

SHADES of Ignorance forsake them! The Omaha Bee and several newspapers published in Western Iowa are now shouting for a public warehouse law for Iowa, so that the poor, down-trodden farmer can have the products of his teeming fields stored in any large city of the state, which would, according to the shouters, be quickly supplied with public elevators of large capacities. Iowa has no city at which grain is marketed other than by the wagon load, and it is not likely that the state ever will have. Much grain is sold by sample direct to Eastern dealers, but not enough to make any city a distributing market of importance. Farmers can borrow money on their grain just as easily and cheaply with as without a warehouse law.

AN effort will be made by the Kansas Railroad Commissioners to secure better car service during the months when the bulk of the grain is shipped and shippers will have to order cars ahead. Cars will be distributed to shippers in the order their requisitions are in the station agent's book. When the supply of cars does not equal the demand, which will be often, the cars will be distributed impartially. That is, cars will be distributed according to the number of shippers, and not according to the wants of shippers, which virtually amounts to discrimination against the large shippers and in favor of the farmer who ships two or three cars a year. When the trade of Kansas is completely

destroyed by these meddling cranks, they may leave the management of the state to abler men.

EVERY merchant should read a journal published in the interest of his business. It keeps him informed regarding what is taking place in his own line, adds to his knowledge of the business, increases his respect for the business and causes him to take a greater interest in his business. If you wish to keep in touch with the elevator business and grain trade, subscribe for the only journal devoted to that interest, the AMERICAN ELEVATOR AND GRAIN TRADE.

THE Farmers' Alliance of Grand Meadow, Minn., has petitioned the Inter-State Commerce Commission to compel the Chicago, Milwaukee & St. Paul Railroad Company to discontinue its discrimination against timothy seed and in favor of flaxseed. The rate on flaxseed to Chicago is 7 cents less than on timothy, which is shipped in sacks. Flaxseed, which is shipped in bulk, is loaded, unloaded and handled at termini by elevator men for a small compensation. The railroad company charges 7 cents a hundred for the same service in handling timothy.

THE Charter Gas Engine Company of Sterling, Ill., write us: "We have, during the past month, booked orders from and shipped engines to the following states: Illinois, Kentucky, Missouri, Ohio, New York, Pennsylvania, South Dakota, Kansas, Michigan, Indiana and Wisconsin and to Long Island. Several of the states received several engines each and ten were sent to parties in Illinois. Since the crop is practically assured, there has been a big rush of orders from elevator owners. We have hardly an engine of any size unorderd, but, of course, are prepared to turn them out very rapidly."

THE Supreme Court of Pennsylvania has rendered a decision which will make elevators in that state owned by railroad companies taxable for local purposes. The court held that railroad companies are not relieved as to all they can lawfully take or hold under their charters, and that which is merely convenient, as affording facilities for conducting the business of the company is liable. Some elevators in Pennsylvania and in New Jersey are reported to have escaped taxation for local purposes on the ground that they were the property of a railroad company. In a large city like Philadelphia, or even at Jersey City, this is an item of some importance.

KANSAS farmers have started another scheme to bull the price of farm products. The new scheme will end with the beginning; it is an old scheme in a new form. If successful, separate companies organized by the farmers will operate storehouses in the state, and combine to hold products until good prices can be obtained for them. If the farmers had the entire grain crop of Kansas in one storehouse they could not command an unreasonable price for it this year. It would be pleasing to see them try to bull the market. This after all our farmer legislation and agitation against market manipulation, leads us to remark that the farmers will be running bucket shops soon.

A GOOD many uninsured elevators with uninsured contents have gone up in smoke. Owners of uninsured houses should take every precaution against fire, and provide apparatus for extinguishing it. It is not absolutely necessary to provide expensive apparatus; fire pails and mill hose have been found very effective. From the reports of a Boston insurance company it is learned that out of 215 fires extinguished only 15 were extinguished by municipal fire departments, while 48 extinguishments were credited to mill hose, 38 to fire pails, 13 to the two devices combined, and 58 other fires were extinguished by them in combination with other devices. The simpler apparatus seems to be the most effective.

Points and Figures.

With young men wild oats do not seem to go against the grain.

A hailstorm cut down 10,000 acres of standing grain in Ransom and Sargent counties, N. D., July 2.

A Sedgwick county farmer was awakened the other night by a noise which he supposed was caused by cattle in his corn, but upon investigating the situation he found it was simply the cracking of the corn resulting from its rapid growth.—*Kansas City Star*.

To compute the contents of a hopper multiply the length by the breadth, in inches, and this product by one-third the depth, measuring to the point. Divide the last product by 2,150 and the quotient thus obtained will be the contents of the hopper in bushels.

To determine the contents of a bin multiply the length by the breadth, in feet, and this by the depth. Take four-fifths of the product as the number of bushels. If measurements are taken in inches multiply as above and divide by 2,150 for the number of bushels.

Crickets are on the warpath in the Indian Reservation near Warm Springs, Okla. Ter., and have eaten up the grass and grain. The army is eight miles long and two miles wide, and when it enters a field of growing grain everything is eaten, leaving the ground perfectly bare.

The rice industry in the United States has room for expansion. The per capita consumption is less than five pounds, while each individual consumes 275 pounds of wheat in a year. The home production and the importations of rice amount to less than the equivalent of 5,000,000 bushels of wheat annually.

The barley malt exports in May amounted to 711 bushels, valued at \$947, against 85,832 bushels, valued at \$64,359, in May last year; and in the eleven months ending in May we exported 122,906 bushels, valued at \$78,918, against 170,759 bushels, valued at \$127,135, in the same period of the last fiscal year.

To make elevator cups discharge perfectly, speed of belt and size of pulley should be as follows: Of belt speed 200 to 250 feet per minute, size pulley 24 inches; speed 300 to 350 feet, pulley 36 inches; speed 400 to 450 feet, pulley 48 inches; speed 500 to 550 feet, pulley 60 inches, and speed 600 to 650 feet, pulley 72 inches; or 35 to 40 revolutions per minute of any size pulley.

The inventors of machines for decorticating ramie fiber will have an opportunity to exhibit their appliances at the Columbian Exposition, where a display is to be made of the fiber industry. Every year 1,000,000 acres of flax is grown in this country, and a large acreage of hemp is also cultivated, but little is used. The growth of fiber plants deserves more attention than has been given to it.

EXPORTS AND IMPORTS OF RICE.

Our exports of home-grown rice during May amounted to 81,753 pounds, valued at \$5,091, against 14,589 pounds, valued at \$713, during May last year; and during the eleven months ending with May we exported 493,999 pounds, valued at \$30,276, against 383,022 pounds, valued at \$20,358, during the corresponding period of the preceding fiscal year.

We imported during the month of May, 1890, free of duty, from the Hawaiian Islands 875,400 pounds of rice, valued at \$43,678, and none in May this year. For the eleven months up to June 1, 1891, we imported from those islands 7,840,900 pounds, valued at \$415,630, against 9,972,300 pounds, valued at \$459,239, for the same months of the preceding fiscal year. Of this rice we exported in May 2,015 pounds, valued at \$140, and none in May last year. During the eleven months up to June 1 we exported 5,287 pounds, valued at \$337, against 23,300 pounds, valued at \$1,167, for the corresponding period of 1889-90.

Our imports of rice, duty paid, for the month of May were 81,500,643 pounds, valued at \$651,533, against 11,674,931 pounds, valued at \$206,036, for May last year; and during the eleven months ending with May we imported 172,100,786 pounds, valued at \$3,514,344, against 102,597,610 pounds, valued at \$1,852,201, during the same months of 1889-90. Of this imported rice we exported in May 927,953 pounds, valued at \$20,936, against 684,759 pounds, valued at \$12,792, in May last year; and during the eleven months ending with May 7,233,162 pounds, valued at \$148,082, against 5,881,252 pounds, valued at \$112,491, during the same months of 1889-90.

KANSAS WAREHOUSE LAW.

An act to regulate warehouses, the inspection, grading, weighing and handling of grain, and providing for the appointment of a state grain inspector:

Be it enacted by the Legislature of the State of Kansas:

Section 1. That all elevators or warehouses located in this state in which grain is stored in bulk, and in which the grain of different owners is mixed together, or in which grain is stored in such a manner that the identity of different lots or parcels cannot be accurately preserved, and doing business for a compensation, and having capacities of not less than 75,000 bushels each, are hereby declared public warehouses.

Sec. 2. That the proprietor, lessee or manager of any public warehouse shall be required, before transacting any business, to procure from the regular chartered and acting Board of Trade in the nearest city of the first or second class, as the case may be, a license permitting such proprietor, lessee or manager to transact business as a public warehouseman under the laws of this state, which license shall be issued by said Board of Trade upon written application therefor; and said application shall set forth the name of such warehouse, and the individual name of each person interested as owner or principal in the management of the same; or if the warehouse be owned or managed by a corporation, the names of the president and secretary shall be stated, and said license shall give authority to carry on and conduct the business of a public warehouse in accordance with the laws of the state, and shall be revocable by the Board of Trade issuing the same upon a summary proceeding before said Board upon complaint of any person in writing setting forth the particular violation of law, satisfactory proof, to be taken in such manner as said Board may direct, having first been made of such violation.

Sec. 3. Any person receiving a license as herein provided shall file immediately with the Secretary of State a bond to the state of Kansas for the benefit of all persons interested, with good and sufficient sureties approved by said Board of Trade, in the penal sum of not less than \$10,000 nor more than \$50,000, in the discretion of the Board of Trade issuing such license, conditioned for the faithful performance of his duty as a public warehouseman and his full and unreserved compliance with all laws of this state in relation thereto. A fee of \$2 for the issuance of each license and filing of said bond shall be paid to the Secretary of State by the person obtaining said license and filing said bond. Provided, That when any person or corporation procures a license for more than one warehouse in any one county in the state, no more than one bond need be given.

Sec. 4. Any person who shall transact the business of a public warehouseman without first procuring a license and filing said bond as herein provided, or who shall continue to transact any such business after such license has been revoked (save only that he may be permitted to deliver property previously stored in such a warehouse) shall on conviction thereof be fined in a sum not less than \$100 nor more than \$500 for each and every day such business is carried on in such manner, and the Board of Trade having such warehouse under its supervision may refuse to renew any license or grant a new one to any person whose license has been revoked within one year from the time the same was revoked.

Sec. 5. It shall be the duty of every public warehouseman to receive for storage any grain, dry and suitable for warehousing that may be tendered to him in the usual manner in which warehouses are accustomed to receive the same in the ordinary and usual course of business, not making any discrimination between the persons desiring to avail themselves of warehouse facilities. Such grain to be in all cases inspected and graded by a duly authorized inspector, but to be stored with grain of a similar grade; but if the owner or consignee so requests, and the warehouseman consents thereto, his grain of the same grade may be kept in a bin by itself, apart from that of other owners, which bin shall thereupon be marked and known as a special bin. If a warehouse receipt be issued for grain so kept separate it shall state on its face that it is a special bin, and shall state the number of such bin; and all grain delivered from such warehouse shall be inspected on its delivery by a duly authorized inspector of grain. Nothing in this section shall be construed so as to require the receipt of any kind of grain into a warehouse in which there is not sufficient room to accommodate or store it properly, or in cases where such warehouse is necessarily closed. The charge for inspection upon receipt and delivery shall be paid by the warehouseman, and may be added to the charge of the storage. The licensing Board of Trade may recover such charges of the warehouseman by an appropriate action in its name.

Sec. 6. Upon the application of the owner or consignee of grain stored in a public warehouse, the same being accompanied by evidence that all transportation or other charges which may be a lien upon the grain, including the charges for freight, inspection and weighing, have been paid, the warehouse shall issue to the person entitled to receive it a warehouse receipt therefor, subject to the order of the owner or consignee, which receipt shall bear date corresponding with the receipt of the grain in store and shall state upon its face the quantity and inspected grade of the grain and that the grade mentioned on it has been received into store to be stored with grain of the same grade by inspection, and that the grain represented thereby is deliverable upon the return of the receipt properly indorsed by the person to whose order it was issued and the payment of proper charges for storage.

Sec. 7. All warehouse receipts for grain issued by the same warehouse shall be consecutively numbered, and no

two receipts bearing the same number shall be issued from the same warehouse during any one year, except in case of a lost or destroyed receipt, in which case the new receipt shall bear the same date and number as the original, and be plainly marked on its face, "Duplicate." If the grain was received from railroad cars, the number of each car shall be stated on the receipt with the amount it contained; if from barges or other vessels, the name of such craft; if from team or other means, the manner of its receipt shall be stated on its face.

Sec. 8. Upon the delivery of grain from store upon any receipt, such receipt shall be plainly marked across its face the word, "Canceled," with the name of the person canceling the same, and thereafter be void and not again be put in circulation, nor shall grain be delivered twice upon the same receipt. No warehouse receipt shall be issued except upon an actual delivery of grain into store in the warehouse from which it purports to be issued and which is to be represented by the receipt. Nor shall any receipt be issued for a greater quantity of grain than was contained in the lot or parcel so received; nor shall more than one receipt be issued for the same lot of grain, except in cases where a receipt for a part of a lot is desired, and then the aggregated receipt for a particular lot shall cover that lot and no more. In cases where a part of the grain represented by the receipt is delivered out of the store and the remainder is left, a new receipt may be issued for such remainder, but the new receipt shall bear the same date as the original and shall state on its face that it is balance of receipt of the original number, and the receipt upon which a part has been delivered shall be canceled in the same manner as if it all had been delivered. In case it be desirable to divide one receipt into two or more, or in case it be desirable to consolidate two or more receipts into one, and the warehouseman consents thereto, the original receipt or receipts shall be canceled the same as if the grain had been delivered from the store, and the new receipt or receipts shall express on their face that they are a part of another receipt or consolidation of other receipts, as the case may be, and the number of the original receipts shall also appear on the new ones issued as explanatory of the change, but no consolidation of receipts differing more than ten days in date shall be permitted. All new receipts issued for old ones canceled as herein provided shall bear the same date as those originally issued, as near as may be.

Sec. 9. No warehouseman in this state shall insert in any receipt issued by him any language in any wise limiting or modifying his liabilities or responsibility as imposed by the laws of this state.

Sec. 10. On the return of any warehouse receipt properly indorsed, and the tender of all proper charges upon the property represented by it, such property shall be immediately delivered to the holder of such receipt, and shall not be subject to any further charges for storage after demand for such delivery shall have been made; and the property represented by such receipt shall be delivered within twenty-four hours after such demand shall have been made and the cars or vessels of transportation of same shall have been furnished. The warehouseman in default shall be liable to the owner of such receipt for damage occasioned by such default in the sum of 1 cent per bushel and in addition thereto 1 cent per bushel for each and every day of every such neglect or refusal to deliver. Provided, no warehouseman shall be held to be in default in delivering if the property is delivered in the order demanded and as rapidly as due diligence, care and prudence will justify; but no grain shall be delivered from store or warehouse until the receipt for same shall have been actually returned.

Sec. 11. It shall be the duty of every owner, lessee and manager of every public warehouse in this state to furnish in writing, under oath, at such times as the Board of Trade issuing his license shall require and prescribe, a statement concerning the condition and management of the business as such warehouseman.

Sec. 12. The warehouseman of every public warehouse located in the state shall on or before every Tuesday morning of each week cause to be made out and shall keep posted up in business office of his warehouse in a conspicuous place a statement of the amount of each kind and grade of grain in store in his warehouse at the close of business of the previous Saturday, and shall on each Tuesday morning render a similar statement made under oath by one of the principal owners or operators, or by the bookkeeper thereof having a personal knowledge of the facts, to the secretary of the Board of Trade issuing the license of said warehouse. He shall also be required to furnish daily to said secretary a correct statement of the amount of each kind and grade of grain received in store in such warehouse on the previous day for which receipts have been issued, also the amount of each kind and grade of grain delivered or shipped by such warehouseman during the previous day for which receipts have been returned, and what warehouse receipts upon which the grain has been delivered on such day have been canceled, giving the number of each receipt, and the amount, kind and grade of grain received and shipped upon each; also how much grain, if any, was so delivered or shipped, and the kind and grade of it for which warehouse receipts had not been issued; the aggregate of such reported cancellation and delivery of unreceipted grain corresponding in amount, kind and grade with the amount so reported delivered or shipped. He shall also at the same time report what receipts, if any, have been canceled and new ones issued in their stead, as herein provided for; and the warehouseman making such statement shall in addition furnish the secretary of said Board of Trade any further information regarding the receipts issued or can-

celed that may be necessary to enable him to keep a full and complete record of all receipts issued and canceled and of grain received and delivered.

Sec. 13. Every warehouseman of public warehouses located in this state shall be required, during the first week in September of each year, to publish in one or more of the newspapers (daily if there is such) published in the city or village in which such warehouse is situated a table or schedule of rates for the storage of grain in his warehouse during the ensuing year, which rates shall not be increased during such year. The maximum charge for storage and handling of grain, including the cost of receiving and delivering, shall be for the first fifteen days or part thereof 1 cent per bushel, and for each fifteen days or part thereof after the first fifteen days $\frac{1}{2}$ cent per bushel, and for continuous storage between the 15th day of November and the 15th day of May following not more than 4 cents per bushel.

Sec. 14. Any public warehouseman may, on the written request of the owner of any grain stored in a private bin, upon the surrender of the receipt thereof, be permitted to dry, clean or otherwise change the condition or value of any such lot of grain; but in such case it shall only be delivered as such separate lot, without reference to the grade it may be made by such process of drying or cleaning. Nothing in this section, however, shall prevent any warehouseman from removing grain within his warehouse for its preservation or safe keeping. No public warehouseman shall be held responsible for any loss or damage to property by fire while in his custody, provided reasonable care and vigilance be exercised to protect and preserve the same; nor shall he be held liable for damage to grain by heating if it can be shown that he has exercised proper care in handling and storing the same, and that such heat or damage was the result of causes beyond his control. In order that no injustice may result to the holder of grain in any public warehouse, it shall be the duty of such warehouseman to dispose of, by delivery or shipping in the ordinary and legal manner of so delivering, that grain of any particular grade which was first received by him or which has been for the longest time in store in his warehouse; and unless the public notice hereinafter provided has been given, that some portion of the grain in his warehouse is out of condition or is becoming so, such warehouseman shall deliver grain of quality equal to that delivered to him on all receipts presented. In case, however, any warehouseman shall discover that any portion of the grain in his warehouse is out of condition, or becoming so, and it is not in his power to preserve the same, he shall immediately give personal notice to the owner, if known, and if not known by public notice by advertising in a daily newspaper in the city in which such warehouse is situated, and by posting a notice in the most public place (for such purpose) in such city, of its actual condition, as near as he can ascertain. It shall state in such notice the kind and grade of the grain and the bin in which it was stored, and shall also state in such notice the receipts outstanding upon which such grain will be delivered, giving the number, amount and date of each, which receipts shall be those of the oldest dates and numbers then in circulation or uncanceled, the grain represented by which has not previously been declared or receipted for as out of condition; or if the grain longest in store has not been receipted for, he shall so state, and shall give the name of the party for whom such grain was stored, the date it was received, and the amount of it; and the enumeration of receipts and the identification of grain so discredited shall embrace as nearly as may be as great a quantity of grain as is contained in such bins, and such grain shall be delivered upon return and cancellation of the receipts, and the unreceipted grain upon the request of the owner or person in charge thereof. Nothing herein contained shall be held to relieve the said warehouseman from exercising proper care and vigilance in preserving such grain after such publication of its condition, but such grain shall be kept separate and apart from all direct contact with other grain, and shall not be mixed with any other grain while in store in such warehouse. Any warehouseman guilty of any act or neglect, the effect of which is to depreciate property stored in the warehouse under his control, shall be held responsible therefor to the person damaged thereby, and the bond of such warehouseman shall be held for all damages occasioned thereby. Nothing in this section shall be construed so as to permit any warehouseman to deliver any grain stored in a special bin or by itself, as provided in this act, to any but the owners of the lot, whether the same be represented by a warehouse receipt or otherwise. In case the grain declared out of condition, as herein provided for, shall not be removed from store by owner thereof within thirty days from the date of the notice of its being out of condition, it shall be lawful for the warehouseman where the grain is stored to sell the same at public auction for account of said owner, by giving ten days' public notice by advertisement in a newspaper (daily if there be such) published in the city or town where such warehouse is located.

Sec. 15. All persons owning property, or who may be interested in the same, in any public warehouse, and all duly authorized inspectors of such property, shall at all times during the ordinary business hours be at full liberty to examine any and all property stored in any public warehouse in this state, and all proper facilities shall be extended to such person by the warehouseman, his agents and servants for an examination, and all parts of the public warehouse shall be free for the inspection and examination of any person interested in property stored therein, or any authorized inspector of such property; and all scales used for weighing of property in public warehouses

shall be subject to the examination and test by any duly authorized inspector, weighmaster or sealer of weights and measures, at any time when required by any person or persons, agents or agent, whose property has been or is to be weighed on such scales, and the fee for said test shall be paid by the parties making said demand if the scales are found correct, and by the warehouse proprietor if found incorrect. Any warehouseman who may be guilty of continuing to use scales found to be in an imperfect or incorrect condition by such examination and test, until the same shall have been pronounced correct and properly sealed, shall be liable to be proceeded against as hereinafter provided.

[TO BE CONTINUED.]

PRESS COMMENT.

TRADING IN WAREHOUSE RECEIPTS.

The interchange of receipts for grain takes largely the place of actual transfer, and gives to all parties, from the producer to the speculator at the central market, the benefit of the margins. It is not a bucket-shop business. It is a traffic in credits having behind them the values they represent. The warehouse is merely the convenient storage place of the property. The receipt shows precisely where that property is. It is as negotiable a representative of value as a negotiable instrument of any other kind, and is as good as a bank note.—*Omaha Bee*.

WILL NOT SUCCEED.

Many western newspapers, including some of those published in Nebraska, do not believe that the Nebraska farmers will succeed in their proposed movement to hold back their wheat until the "rush" of new grain is over, thereby securing the larger prices that generally prevail shortly after an average crop is harvested. It is pointed out that a very large winter wheat crop in the United States is now practically assured, and that the spring wheat outlook is very favorable, both of which facts mean that the Nebraska wheat growers may hold back their entire crop for one, two, three or four months without influencing receipts visibly or appreciably, and consequently without influencing prices in the least.—*Milling World, Buffalo*.

SHORTAGE AND PRICE.

The visible supply of wheat promises to be the lowest known in this country for a number of years when the new crop begins to move in volume sufficient to increase it. The talk of very large shortage in the new crop of Eastern Europe of wheat and rye started to it the surplus from all other parts of the world. As a result there is the queer condition that the surplus now in the importing countries is not only larger than usual, but is the immediate cause of the late declines in the market prices of wheat. The mistake was that in the rush following the development of damage all available surplus grain from all other countries was put in movement for Eastern Europe. It will take a few months to equalize the old reserves and the new crops, but good prices for them seem safe in the end, in spite of late depression.—*Minneapolis Market Record*.

FUTURE OF CORN VALUES.

Two points in the value of corn are suggested by the situation. First, that the prices of winter and spring and indeed since the late harvest, must have induced farmers to part with a large proportion of their surplus. The Eastern states have been very free buyers in the interior as well as from the lake centers. We are apt to measure the movement by the shipments from the latter, while it is not a criterion. It is not reasonable to suppose that farmers have much corn on hand. In many vicinities the price nearly corresponds to the lake value. Secondly, under these supposed conditions it seems absurd to us that cash value of corn in New York should be maintained at 6 cents per bushel above September, and at Chicago 5 cents above. Feeders of corn will begin to use the new crop in October, but no commercial corn will be received before November, and not then if the season at harvest should be wet. July corn may be too high, but on its merits it is of no more value than September, and we think the latter month will develop a real scarcity.—*Toledo Market Report*.

Wheat in a portion of Cheyenne Co., Wyo., is suffering from grasshoppers. Being too young, they have as yet done no great damage to crops, but when they get their wings they will spread over the country and probably do great damage.

Kansas farmers find a certain kind of humor in alluding to a man whose farm has been sold under a mortgage foreclosure as a "Whereas," in memory of the usual beginning of the notice of sale, "Whereas, default has been made," etc. But instead of organizing themselves into anti eviction societies, they would do much to reduce the stock of whereases aforesaid by getting rid of the blatherskite politicians, and harrowing up the surface of the earth.—*St. Paul Pioneer Press*.

WATERWAYS

Work on the Chignecto Ship Railway has ceased on account of a lack of funds.

Navigation in the south branch of the Chicago River is still impeded by the Canal street bridge.

The bank of the Miami Canal in Ohio broke June 11 during a heavy rainstorm, and flooded the country south of Dayton.

The Chincoteague and Assawoman Canal, on the coast of Delaware, has been completed and vessels can now pass through.

The government has about 175 men actively engaged in improving the Ohio River at Louisville, enlarging the basin of the canal and blasting out rocks in the falls.

That the Missouri River has not gone out of use as a highway of commerce, is evidenced by the shipment of 7,000 bushels of corn by Samuel Bittenberger at Ponca, Neb., June 15, on the steamer Rosebud.

The government has delayed taking control of the Portage Lake Canal because the canal company could not give a clear title to adjacent lands. It is possible that the government may take possession of the inside lands and manage the canal.

The Illinois Legislature passed a bill at its last session authorizing the Illinois and Michigan Canal Commissioners to make leases for twenty years instead of ten, and permitting the commissioners to lease an elevator site on canal property near Chicago.

The Erie Canal may suffer a lack of water during the dry season in consequence of a decision of the court of appeals which, reversing a previous decision, recently decided that the city of Syracuse could use the water of Skaneateles Lake, now the principal feeder of the canal at that place.

The trustees of the Chesapeake and Ohio Canal have petitioned the court at Hagerstown, Md., for an injunction to prevent the sheriff of Allegheny county from levying on the property of the canal company to satisfy a judgment for \$7,000 with interest since 1849. The court reserved its decision.

The Canadian Minister of Railways and Canals reports that for the year ending June 30, 1890, the number of vessels passed through the canals was 23,935 carrying 3,826,280 tons of freight, and paying \$46,641 toll. The United States vessels numbered 4,542, carrying 830,648 tons, and paying \$13,436 toll.

The executive committee of the Lake Carriers' Association held a session at Buffalo June 19, and decided to present a memorial to the state department at Washington, asking the department to make the question of discriminating tolls in the Welland Canal a subject for discussion before the Reciprocity Congress to be held in October.

A plan is on foot to connect Lake Superior ports with the Atlantic Ocean, the terminal points being Duluth and Norfolk, Va. A steamer will ply between Duluth and Muskegon, Mich., where the freight will be transferred to and from an extension of the Columbus, Lima & Milwaukee Railroad. The Duluth, South Shore & Atlantic Railroad is back of the scheme.

Ex Senator Warner Miller addressed the members of the San Francisco Chamber of Commerce at their annual banquet June 10, on "The Marriage of the Oceans," that is, the Nicaragua Canal, telling why the people of the Pacific Coast should support the enterprise. He said, among other things, that the canal could be completed in six years at a cost of \$65,000,000.

Ft. William, Ont., the town which grew so rapidly when the Canadian Pacific Railway made the mouth of the Kaministiquia River the terminal point where the lake steamers connect with its main line, handles a large proportion of Manitoba's wheat crop. Several years ago the Canadian Pacific built two grain elevators there, each having a capacity of more than a million bushels.

The Nicaragua Canal Company recently elected the following directors: Warner Miller, Gen. Samuel Thomas, J. F. O'Shaughnessy, J. W. Miller, A. Seward Webb, George Davis, Henry R. Hoyt and Gordon McDonald of New York; Smith M. Weed of Plattsburg, N. Y.; Stuyvesant Fish, president Illinois Central Railway; N. K. Fairbank of Chicago; Henry A. Parr of Baltimore, and H. D. Slaven.

The strike of the longshoremen at Chicago has spread until it includes 800 men, who are confident of final victory. Many hundred cars of freight are standing on track awaiting the settlement. Steamers arriving are tied up waiting for stevedores to unload them, others clear light and pick up cargoes at other ports. The stevedores want their pay raised from 20 to 25 cents an hour, but the line agents have taken a firm stand against this increase.

The Suez Canal is too small for the traffic passing through. The relief afforded by the diminution of time required for transit is found to be insufficient. The canal is being widened about fifty feet for a distance of twenty-two miles from Port Said. A railroad is being built to handle local traffic which is now hindering steamers pass-

ing through. During the year 3,389 vessels passed through the canal, giving a total receipt of about \$14,000,000.

The secretary of war recently ordered that the lock of the Sault Ste. Marie Canal be closed and pumped out in order that it might be examined by a representative of the department of justice. This order aroused the vesselmen and so many complaints poured in that it was rescinded. The government is defendant in a suit pending before the court of claims for alleged infringement of a patent valve, which the patentee asserts has been introduced into the Sault locks without his consent and without compensation. An inspection was made, but the locks were not closed.

The Sault Ste. Marie Canal passed 9,041,213 tons of freight valued at \$102,214,949 in 1890 against 7,516,022 tons, valued at \$83,732,527 the year previous. Up to the present time \$28,038,596 have been expended on improvements above Niagara Falls and the saving by the Sault Ste. Marie Canal last year returned about \$1.80 for every dollar spent on the great lakes. The cost of transporting the freight which passes through the canal amounted to an average of 1 1/2 mills per ton per mile in 1891, and absorbed about 9 1/4 per cent. of its value, the average distance being 707 miles.

The preliminary preparations for the Hennepin Canal have nearly been completed by United States District Attorney Milchrist and Captain W. L. Marshall, the engineer. The last Congress appropriated \$500,000 toward building the canal, and several million dollars will be necessary to complete it. The canal will run from Hennepin on the Illinois River to the mouth of the Rock River, below Rock Island, a distance of ninety miles. Boats of 280 tons burden will be accommodated by a channel 13 feet deep and 80 feet wide, saving a long trip down the Illinois River. A feeder running south from the Rock River will strike the canal in the middle. Work will be pushed as rapidly as possible.

A party composed of members, or prospective members, of the Senate Commerce Committee and the House River and Harbor Committee, left Cleveland July 10 for a tour of the Great Lakes as the guests of Senator McMillan and Representative Stephenson of Michigan. The excursionists will pass through the Detroit River, thence north to Mackinaw, Sault Ste. Marie, and will visit Duluth and cities on the south shore of Lake Superior. The party will inspect the Lime Kiln channel in the Detroit River, the government canal connecting the river and Lake St. Clair, the harbor at Sand Beach, the Hay Lake channel of the St. Mary's River and the government works being constructed at the new Sault Ste. Marie Canal.

The whaleback steamer Charles W. Wetmore cleared from Duluth June 11 with 70,418 bushels of wheat for Liverpool, and a week later reached Kingston, Ont., where a portion of the wheat was discharged. After running the Rapids of the St. Lawrence the vessel was reloaded at Montreal with 90,000 bushels. The Wetmore is one of the first American steamers built on inland waters to cross the ocean and her novel form will make her an interesting object to the Englishmen. This shipment emphasizes the necessity of improving the waterways east of Lake Ontario, whether in Canada or south through New York. The completion of the improvements now being made in the St. Lawrence River by the Canadian government will mark the dawn of a new era in lake traffic.

OBITUARY

Otis Varney, hay dealer at Deering, Me., is dead.

Peter Martin, a grain buyer of St. Louis, Mo., died recently.

William Graham, a grain dealer on the Chicago Board of Trade, died June 23, aged 50 years.

George Cascaden of Boyer, Evans, Casaden & Co., manufacturers and importers of bags and burlaps at Philadelphia, is dead.

Ex-Gov. Ludington of Wisconsin died at Milwaukee, June 17, aged 78 years. In 1838 he succeeded Solomon Juneau in the grain business. He brought the first seed wheat to that section and bought the first load of grain sold.

C. W. Whittemore, a prominent grain dealer of Boston, Mass., died June 12 of blood poisoning. A few days before he was inspecting some hay and a splinter of wood penetrated his hand. An operation was performed and blood poison resulted, causing his death.

Texas crops are estimated at 12,000,000 bushels wheat, 80,000,000 bushels corn, 20,000,000 bushels oats, 500,000 tons hay, and 2,000,000 bales of cotton. All these crops are of good quality.

Kansas farmers use the following method to destroy young grasshoppers: Outside of the fields it is desired to protect two deep trenches are plowed fifty feet apart. A sheet iron trough is hauled through these trenches by a horse hitched to the trough by a long iron chain. The trough is about five feet long and six inches deep, and is kept red hot by a fire of some light material. The insects that escape death in one trench meet sure death in the other.

ELEVATOR

GRAIN NEWS

Anson, Tex., wants an elevator.

Gainesville, Tex., wants a grain elevator.

An elevator will be built at Wabasha, Wis.

A grain elevator is to be built at Carman, Man.

Rockdale, Tex., is to have a cotton-seed oil mill.

A new elevator will be erected at Bellwood, Neb.

A starch factory is talked of at Council Bluffs, Ia.

A broom factory is to be built at Deadwood, S. D.

Jonathan Gould will build a brewery at Portage, N. Y.

A glucose factory may be built at Council Bluffs, Ia.

A new grain elevator will be built at Humboldt, Neb.

Charles Gutman will build a brewery at Philadelphia.

J. H. Schneider is rebuilding his brewery at Cleveland, O.

C. E. Ball is building a brewery at West Millcreek, Pa.

Send us news of your district of interest to our readers.

E. & P. Mayrhofer will build a brewery at Julian, Cal.

H. W. Paulsen will build a brewery at San Francisco, Cal.

A cotton-seed oil mill is desired by the people of Plano, Tex.

The Standard Brewery is building a brewery at Chicago.

Thomas Zoltowski is building a brewery at Detroit, Mich.

William H. Smith has built an elevator at Ravenna, Mich.

Charles G. Curtis is building a malt house at Buffalo, N. Y.

The elevator at Port Huron, Mich., has been closed for repairs.

A brewery will be built at Greenwood, Cal., by Mary Muhlbach.

The new grain elevator at Eudora, Kan., has been completed.

P. M. Rindesbacher & Co. will build a grain elevator at Stockton, Ill.

A cotton-seed oil mill and fertilizer works will be built at Sumter, S. C.

N. B. Hill, dealer in grain and live stock at Vincent, Ia., has sold out.

The Union Brewing Company of Lebanon, Pa., will build a brewery.

Mitchell Morrissey has sold out his grain business at Marquette, Neb.

Francis Kendall will build a cotton seed oil mill at Bridgeport, Ala.

A brewery will be built at Mead, Pa., by Walster, Echnoz & Hurty.

The Evansville Brewing Company will build a brewery at Evansville, Ind.

R. Davis, grain dealer at Anita, Ia., has been succeeded by John A. Irving.

The Centennial Brewing Company will build a brewery at Spokane, Wash.

Another elevator is being built at St. Charles, Minn., by Strong & Miller.

Cooley & Son of Elsie, Mich., are putting in a Dickey Overblast Separator.

R. Troendle & Co., hay dealers at Spencer, Ia., have dissolved partnership.

Stein & Wiley, grain dealers at Stockton, Cal., have dissolved partnership.

Gunn & Murray of Strathroy, Ont., will start a flax mill at Watford, Ont.

A. F. Cameron, dealer in grain and dry goods at Martland, Neb., has sold out.

The Granite Lake Brewing Company of Greenfield, N. Y., will build a brewery.

The farmers in the neighborhood of Sintaluta, Man., intend to build an elevator.

Hay Bros., grain dealers and millers at Listowel, Ont., have dissolved partnership.

O. T. Hulburd has sold his elevator at Hiawatha, Kan., to E. N. Morrill, and has disposed of seven other

houses along the Missouri Pacific and Union Pacific, to close his business.

The Fort Hamilton Brewing Company will build a brewery at Brooklyn, N. Y.

Helmick & Co. of Belleflower, Ill., are putting in an A. P. Dickey Grain Cleaner.

William H. Young has gone into the grain and lumber business at Clearwater, Kan.

A cotton-seed oil mill is to be built at Greenville, Tex., by J. N. Hughes and others.

When a change occurs in your firm let us know it so that we can inform our readers.

The flax and excelsior mills recently burned at Alma, Mich., will be rebuilt at Duluth.

R. W. Thacher, grain dealer at Albans, N. Y., has been succeeded by F. U. Bresler & Co.

Joseph Leaser has leased his elevator at Dumont, Minn., to Turner & Brenner of Marshall.

The settlers in the vicinity of Craven, Assa., contemplate the building of an elevator.

Gunn & Co., proprietors of a flax mill at Ailsa Craig, Ont., have dissolved partnership.

True & Sump, dealers in grain and produce at Armada, Mich., have dissolved partnership.

Williams & Drake, grain commission dealers at Cincinnati, O., have dissolved partnership.

L. Hoebel of Hildreth, Neb., is putting in an A. P. Dickey Overblast Suction Separator.

A 200,000-bushel elevator will be reconstructed from the Pettit Mill at Minneapolis, Minn.

The Crescent Manufacturing Company has started a broom factory at Chattanooga, Tenn.

The Naperville Brewing Company has been incorporated at Chicago with \$200,000 capital stock.

The Grand Rapids Brewing Company will build a \$5,000 brewery at Grand Rapids, Mich.

Norton & Dickson, dealers in grain and produce at Ogden, Utah, have dissolved partnership.

The Home Brewing Company has been incorporated at Indianapolis, Ind., with \$200,000 capital.

E. S. Tuttle, dealer in grain and coal at Norwalk, O., has been succeeded by E. S. Tuttle & Co.

A brewery and malt house will be erected at Fremont, Neb., by a company with \$100,000 capital.

The Jackson Elevator Company has been incorporated at Jackson, Minn., with \$15,000 capital stock.

The L. Z. Foerster Brewing Company has been incorporated at Ypsanti, Mich., with \$100,000 capital.

The Lambertson Elevator at Winona, Minn., is being enlarged from 50,000 to 75,000 bushels' capacity.

Philadelphia received its first consignment of new No. 2 red wheat July 6. It was sold at \$1 per bushel.

J. C. Towle & Co., dealers in grain and flour at Bangor, Me., will build a steam elevator and corn mill.

E. P. Chapman & Co. of Pittsfield, Ill., are building a 75,000-bushel elevator in connection with their mill.

C. E. Rickly, Hoyt & Co., dealers in grain and live stock at Rushville, Neb., have dissolved partnership.

The Western Flour and Grain Company has been incorporated at Kansas City, Mo., with \$5,000 capital.

The Rushville Elevator Company of Rushville, Ind., has surrendered its charter to the Secretary of State.

Honstain Bros. of Minneapolis are erecting houses for the Atlantic Elevator Company of Minneapolis, Minn.

The Honey Grove Cotton seed Oil Company has been incorporated at Honey Grove, Tex., with \$50,000 capital.

The Leisen & Hones Brewing Company has been incorporated at Menominee, Mich., with \$100,000 capital.

Grain received at Buffalo by lake is in good condition. So far this season no hot grain has been received at that port.

Newcomer & Co., grain commission dealers at Baltimore, Md., have taken Waldo Newcomer into partnership.

A 75,000 bushel elevator will be built at Mazeppa, Minn., by a stock company recently formed for that purpose.

A 60,000-bushel elevator is being built on the Grandon farm in North Dakota by Honstain Bros. of Minneapolis, Minn.

The Tupperville Milling and Elevator Co. has been incorporated at Tupperville, Ont., Canada, with \$15,000 capital.

The capacity of the elevator of the Mandan Roller Mill Company at Mandan, N. D., will be increased 40,000 bushels.

William Kirkwood & Co. and A. Geddes & Co., grain dealers at Chicago, have united under the firm name Geddes, Kirkwood & Co. The new firm is composed of

Alexander Geddes, William Kirkwood, G. R. T. Ward, T. E. Wells and W. C. Scott.

The Farmers' Alliance Warehouse and Elevator Company has been incorporated at Dayton, Wash., capital \$50,000.

The Nebraska City Starch Company has been incorporated at Nebraska City, Neb., to manufacture starch and feed stock.

A cotton-seed oil mill will be built at Jonesville, La., by the Southern Ice and Cold Storage Company of Chattanooga, Tenn.

Griffith & Hendrickson, dealers in grain and implements at McCallsburg, Ia., have been succeeded by Jackson & Hendrickson.

The Broom Corn Growers' Association of Kansas has been incorporated at Sterling, Kan., to store broom corn and other farm products.

The Minnesota Warehouse Commissioners have appointed Mr. Monroe of St. Paul, state weighmaster at St. Cloud, under the new law.

The Knapp & French elevator at Venango, Neb., has been bought by the farmers' and business men's association of that city for \$1,400.

A. C. Oldenberg has been appointed chief clerk of the grain department by the Illinois Board of Railroad and Warehouse Commissioners.

The farmers and brewers of Canada are up in arms against the proposed increase of the internal revenue tax on malt from 36 to 72 cents a bushel.

The Lake of the Woods Milling Co. has increased the handling capacity of its elevator at Keewatin, Man., from twenty to thirty-five cars a day.

Vessels arriving at Buffalo with grain from Duluth still suffer from shortages. West Superior is said to be making a better record in this respect.

Duff & Roberts of Douglas, Neb., are overhauling their elevator on the Missouri Pacific Railway, and equipping it with the A. P. Dickey Grain Cleaners.

Nelson Story is building a 210,000-bushel grain elevator at Bozeman, Mont. Barnett & Record, the elevator builders of Minneapolis, have the contract.

The Phoenix Mill and Elevator Company at Tracy, Mo., has been consolidated with the Platte City Milling Company, as the Platte Milling Company.

If you are about to make changes in your elevator or add new machinery inform us of the fact and our advertisers will learn of it through our columns.

The first car of new wheat at Louisville, Ky., was received June 27 by H. Verhoeff & Co. The car contained 750 bushels, which was graded a good No. 2.

The Independent Distilling Company has been incorporated at Chicago, with \$500,000 capital. It will operate distilleries in Chicago in opposition to the trust.

The D. P. Grier Grain Company, a prominent grain commission firm of St. Louis, Mo., made an assignment June 20 to R. J. Dillon. Liabilities about \$225,000.

Honstain Bros., elevator builders of Minneapolis, Minn., have been awarded the contract to build two 20,000-bushel elevators for McCabe Bros. of Glasston, N. D.

The Northern Pacific Elevator Company, general office Minneapolis, Minn., will build twenty new wheat elevators in the Big Bend and Palouse districts of Washington.

The Pittsburg & Western Railway contemplates the erection of an additional elevator at Richmond near Fairport, O. The present 1,000,000-bushel house is kept busy.

William S. Williams of the late firm of Robert Lindblom & Co., grain dealers of Chicago and New York, has obtained a judgment for \$63,415 against Robert Lindblom.

At a recent trial at Minneapolis the Dickey Quadruple Separator cleaned a car of 560 bushels in 20 minutes, taking 2½ pounds of dirt out of 4, once through the machine.

Alliance men at Hiawatha, Kan., are trying to organize a company to build a storage elevator. Their idea is to advance 80 per cent. of the market value of the grain stored.

The L. C. Porter Milling Company of Winona, Minn., is about to build a 100,000-bushel elevator. It will be 40x100 feet and 70 to 80 feet high, and will cost \$15,000 to \$20,000.

Donald Morrison, late of A. J. Sawyer & Co. of Minneapolis, has gone into the grain business in that city and will also represent S. V. White & Co. of Chicago and New York.

The affairs of D. C. Moak & Co., grain dealers of Minneapolis, Minn., who failed three years ago, have just been settled. One-third of the liabilities have been paid to creditors.

The Crescent Elevator Company has been incorporated at Kansas City, Mo. The capital stock is \$25,000 and the directors for the first year are Mason Gregg of Lincoln, Neb., and John O. Bradenbaugh, Charles C. Bradenbaugh, Arthur E. Stillwell and Edward L. Martin of

Kansas City. An elevator will be built to handle about seventy-five cars a day and with a capacity of 150,000 bushels.

F. H. Peavey & Co., the grain and elevator men of Kansas City, have leased the Atchison, Topeka & Santa Fe elevator at Atchison, Kan. It has a capacity for 175,000 bushels.

The Hammond Grain Company has been incorporated at Minneapolis, Minn. Capital stock, \$20,000; incorporators, Stephen F. Hammond, Frank H. Scofield and Oscar D'Absolmont.

A. M. Wright & Co. of Chicago sued Henry Curtis for losses on account of speculative trading and secured a judgment for \$5,005, which was recently affirmed by the Appellate Court.

The Alliance Elevator Company has been incorporated at Howard Lake, Minn. Capital stock, \$25,000; officers, W. D. Thompson, president; Frank R. Curtis, secretary, and N. C. Shaffins, treasurer.

The Oakland Warehouse Company has been incorporated at Chicago to do a warehouse business. Capital stock, \$25,000; incorporators, Frank L. Cheney, Paul Brown and William G. Adams.

Himebaugh & Maryott are building a 10,000 bushel elevator at Rapid City, S. D. Seeley, Son & Co., the elevator builders of Fremont, Neb., have the contract, and will complete the building by Aug. 10.

The Progress Alliance Milling and Grain Company has been incorporated at Pottsville, Tex. Capital stock, \$5,000; directors, William Bynum, S. A. Perdue, Thomas Marion, William Reeves and John Beaty.

If you contemplate building an elevator let all the first-class elevator builders of the country know it by announcing the fact in the AMERICAN ELEVATOR AND GRAIN TRADE. It will not cost you a cent.

If the people of Omaha would have a grain market they must provide elevators, flour mills, malt houses, cereal mills, oil mills, glucose factories and distilleries to handle and consume the grain offered for sale.

The Puyallup Hop Company has been organized at Puyallup, Wash., with a capital stock of \$100,000. The officers are E. Meeker, president; L. R. Searls, vice-president; Fred S. Meeker, secretary, and W. H. Nichol, treasurer.

The Ginter Commission Company has been incorporated at Minneapolis, Minn. The capital stock is \$50,000, and the incorporators are Elmer W. Ginter, Matthew J. Ginter, Lee Morrison, Joseph S. Todd and Edwin R. Beeman.

The Long Point Farmers' Union has been incorporated at Long Point, Ill., to deal in grain and other farm products. Capital stock, \$2,000; incorporators J. H. Fry, I. T. Ramsey, S. Martens, William Zeilman and H. G. Willavize.

When the new elevator built at Bozeman is completed Montana will have only three elevators, all in Gallatin county. The one located at Bozeman and that at Belgrade, a few miles northwest, have together a capacity of 1,500,000 bushels.

The Madelia Farmers' Warehouse Company has been incorporated at Madelia, Minn. Capital stock, \$2,000; incorporators, T. J. Mitchell, J. G. Batchelder, H. W. Wadsworth, M. Bradford, John Shilleto, John McCarthy and S. P. Driggers.

The firm Smith, Hammond & Co. has been formed in Baltimore, Md., to deal in grain. The partners are J. Hume Smith and W. R. Hammond, both experienced grain men. J. W. Snyder, late of Tate, Muller & Co., will be manager of the Western department.

In the case recently tried before a jury in the United States court in New York, known as the "Patna rice" case, the verdict was that the rice imported was unclean rice, and as a consequence the collector of customs was ordered to refund to the importers the excess of duty collected.

R. W. Dunham & Co. of Chicago have made a proposition to creditors, which has been accepted, and the firm will soon resume the grain commission business. On all claims 50 cents cash will be paid on the dollar, 25 cents in one year, and 25 cents in two years. All the creditors agreed to this settlement.

The A. P. Dickey Manufacturing Company of Racine, Wis., are out with their annual catalogue of the Dickey Grain Cleaners, which as usual is a neat and attractive book. As this firm manufactures grain cleaners of all kinds and sizes exclusively, they claim to be able to offer the trade better service than if their time, capital and talents were divided with a general line of other goods.

B. S. Sanborn has been expelled from the Chicago Board of Trade on the charge of manipulating grain after it had been properly inspected by the State Department. He caused carloads of No. 2 oats, properly inspected and ticketed, to be sent to a private warehouse where one-third of the oats was removed and screenings substituted. This mixture he then sold as No. 2 oats, thereby committing a fraud. Nine cars were thus doctored during two weeks of April. The state inspector found traces of No. 3 oats where there should have been nothing but No. 2 and called the attention of the Board of Trade directors to the matter, who appointed an in-

vestigating committee which handed in a report leaving no doubt of Sanborn's guilt. This is the first case of the kind ever known here. Sanborn was a member of the board a little more than a year.

Taking the shortage of grain cargoes into consideration, there is no money in vessel property this year. All ports are alike, with perhaps Duluth taking the lead, as usual, in "stealing" wheat. Masters of vessels trading with the latter port are doing some tall cursing.—*Buffalo Correspondent United States Miller.*

A. C. Johnson of Helena, Mont., has been awarded the contract to deliver 15,000 pounds of corn to the Government Indian Agency at Brainerd, Minn., for \$210; 162,500 pounds of oats at Custer, Mont., Prushville, Neb., Wilmot, S. D., and Detroit, Minn., for \$2,484.25; 2,400 pounds of corn at Wilmot and Rosebud, S. D., for \$304.80. Walter B. Jackson of St. Paul, Minn., is to deliver 40,000 pounds of oats at \$748.

About 2,200 bushels of ungraded wheat, which had been shipped by the notorious Sherman Bros. into the Dakota Elevator at Buffalo, N. Y., for the purpose, it is said, of mixing with the standard grades of hard Duluth wheat, are missing, and there is trouble between the elevator men and the owners of the wheat. The case of S. F. Sherman came up recently. His counsel argued that Sherman had no intention of defrauding the elevators, and that he never sold the grain he took.

Mohr, Zinkeisen & Co., grain commission dealers on the Milwaukee Board of Trade, failed July 8. Liabilities \$100,000; assets \$50,000. The firm carried 300,000 bushels wheat all through the decline, but at the end the pressure became too strong. The firm was established in 1867 by Herman Zinkeisen, now dead, L. Bartlett and Mr. Mohr. Max Zinkeisen succeeded his father after his death in 1875, but retired last February, and Mr. Bartlett retired in 1885. Gustav C. Holstein was taken into partnership in 1886. The firm was a heavy receiver of wheat, and also did a speculative business. The immediate cause of the failure was the taking out of an attachment by Marshall & Ilsley, bankers, for \$25,000, which represents an overdrawn account. F. H. Madgedeburg was appointed receiver.

THE EXCHANGES

Recently the names of ninety-eight delinquents were posted on the Buffalo Merchants' Exchange, which is smaller than usual.

The directors of the St. Louis Merchants' Exchange recently decided to allow all telegraph companies to replace their wires on the floor.

The formation of a State Board of Trade is being agitated in New York. It is to be composed of business organizations in all parts of the commonwealth, united for the purpose of emphatic expression of business sentiment on questions of legislation, etc.

The finances of the Minneapolis Chamber of Commerce are in good condition. The fund for paying off the \$100,000 mortgage will reach that sum by Jan. 1, leaving the entire property clear. The ground and building are valued at \$325,000; on this valuation each of the 540 memberships is worth \$600.

The president and managers of the New York Produce Exchange have appointed the following trade committees: Grain, F. V. Dare, chairman; John Marshall, Samuel Taylor, Jr., H. D. McCord, O. E. Lohrke, Flour, Chas. W. McCutchen, chairman; W. W. Thomas, J. B. Mount, R. O. Sherwood, H. S. Jewell.

The Minneapolis Chamber of Commerce has voted that all parties trading must be members. This amendment to the rules takes effect Sept. 1, and will compel those trading under clerkship tickets issued in the name of the principal to become members. Tickets of membership accordingly rose in price from \$325 before the vote to \$385 after.

The Chicago Board of Trade built a new oats pit recently. The traders gave it a trial, but soon deserted it for their former position between the corn and wheat pits. The relationship between the oats and corn markets is so close that principals want their brokers to be in both places at once, if possible, and the oats crowd will probably not patronize the new pit.

Omaha grain dealers have organized a Grain and Produce Exchange and elected the following officers: Charles H. Fowler, president; J. A. Connor, vice-president; S. A. McWhorter, secretary, and E. P. Peck, treasurer. Directors, A. B. Jaquith, F. C. Swartz, John Christian, C. H. Harris and R. B. Schneider. After the organization had been perfected the Board of Trade voted to take in the Grain Exchange and it was formally absorbed July 1. Tickets of membership will be sold for \$250, and the trading privileges at \$10 per annum. The Grain Exchange met on the evening of July 1 and recommended the following committees: Grain committee, A. B. Jaquith and F. C. Swartz; arbitration committee, Messrs. Walsh, Bryan, Jaquith, Swartz and Christian, and committee on appeals, Messrs. Peck, Connor, Brown, Harris and Fowler.

Fires, Casualties, Etc.

A tornado wrecked four warehouses at Sutherland, Ia., on the night of June 24.

P. D. Harrison, grain dealer at Longview, Tex., suffered loss by fire recently.

The starch works of Stein Hirsch at Chicago were damaged to the extent of \$15,000 by fire June 23; fully insured.

The grain and flour warehouse of Michael Kivalighan at Staunton, Va., was burned June 15. Loss \$6,000; insured.

Edward Salz' grain warehouse at Decoto, Cal., was burned July 5.

The disused distillery of John G. Hornstein at Canton, Ill., was destroyed by an incendiary fire July 1. Loss \$10,000; no insurance.

Daniel Bermes' brewery at Union Hill, N. J., was struck by lightning June 18 and damaged to the extent of \$2,000; fully insured.

The elevator of Childs & Hinrichs at Brownston, Minn., was burned June 15 together with several thousand bushels of wheat, all insured.

J. W. Richter's elevator at Sheyenne, N. D., was struck by lightning July 6 and burned. The house had a capacity of 80,000 bushels, and was not insured.

J. M. Dawes, manager of the grain elevator at Norton, Mo., fell into a bin from which he had been loading wheat, and was buried in the grain and suffocated.

Two elevators at Atkinson, Ill., on the Chicago, Rock Island & Pacific Railway were burned June 26. Several cribs filled with corn were also destroyed. Loss \$15,000.

The elevator of Cargill Bros. at Spicer, Minn., was struck by lightning June 17, and consumed by fire, with about 1,000 bushels of wheat. Loss about \$3,000; insured.

A boy 5 years old was playing in a wheat bin in an elevator at Albany, Ind., June 13, while the grain was being loaded into a car, and was drawn under the grain and suffocated.

The St. Anthony & Dakota Elevator at Crystal, N. D., was burned on the night of July 6 at 11 o'clock. Two thousand five hundred bushels of grain were also burned. Loss \$12,000.

A hay warehouse in New York City was burned July 9, together with 6,000 bales of hay, 9,000 bushels of corn and 4,000 bushels of oats. Loss, on stock, \$25,000; on building, \$3,500.

Sixty-five acres of wheat in Vermillion county, Ind., owned by Secretary of State Matthews, were burned recently, causing a loss of about \$1,200. A locomotive spark started the fire.

Twelve grain trimmers were overcome and almost suffocated while at work in the hold of the steamer Oregon at Chicago recently. They were dug out of the grain and carried ashore unconscious.

The elevator at Warren, Minn., owned by the Inter-state Grain Company was burned on the morning of July 6. It contained 10,000 bushels of wheat, which is a total loss. Loss \$12,000; fully insured.

D. W. Hurst, dealer in grain and agricultural implements at Delmar Junction, Ia., suffered a loss June 24 by the burning of his elevator and 1,400 bushels of oats. Insurance on building, \$2,500; on oats \$500.

A warehouse at Thomasville, Ga., occupied by W. H. Parker, dealer in grain and hay, and Morehouse & Brandon, grocers, was burned at 8 o'clock in the morning of June 6. Loss partly covered by \$10,300 insurance.

Lightning struck the grain elevator of Allen & Co. at Laurens, Ia., recently, in the cupola, ran down the tower, tore open a flax bin and emptied the contents on the ground, ruining most of it. Fortunately no fire followed.

The elevator at Clitherall, Minn., owned by the Northern Pacific Elevator Company, was destroyed by a fire which originated in the mill of Bredeson & Lyseng on the night of June 17. Eight hundred bushels of wheat and two box cars were burned. Loss \$4,000; fully insured.

Albert Whittlesey, employed in S. A. Hendee's elevator at Bushnell, Ill., was found crushed to death June 22. He did not come to dinner so his wife became uneasy and a search was instituted. He was found under a 2,000-pound weight used in connection with the dump in the elevator. A wife and six children mourn his untimely end.

The grain elevator at Centerview, Mo., owned by Parker & Delany, who also dealt in agricultural implements, was destroyed by an incendiary fire May 31, including 6,000 bushels of corn, 500 bushels of wheat, several hundred bushels of oats, many tons of baled hay, and a lot of implements and wagons. Insurance only \$200 on building.

LATE PATENTS

Issued on June 16, 1891.

GRAIN SCOURER.—William B. Anthony, Cetronia, Pa. (No model.) No. 454,159. Serial No. 381,438. Filed Feb. 14, 1891.

GRAIN CAR DOOR.—Edward A. Hill, Chicago, Ill., assignor of one-half to James L. Mallory and Edgar A. Hill, same place. (No model.) No. 454,212. Serial No. 373,893. Filed Dec. 8, 1890.

Issued on June 23, 1891.

BALING PRESS.—Charles Peterson, Maple Plain, Minn. (No model.) No. 454,495. Serial No. 336,913. Filed Jan. 14, 1890.

ELEVATOR AND CONVEYER.—Charles H. Phillips, assignor to Charles J. Seymour, Brookline, Mass. (No model.) No. 454,663. Serial No. 334,350. Filed June 5, 1890.

Issued on June 30, 1891.

GRAIN MEASURER.—John B. Bartholomew, Des Moines, Ia. (No model.) No. 454,898. Serial No. 374,398. Filed Dec. 11, 1890.

APPARATUS FOR TESTING GRAIN.—Paul Helmsdorf, Hanover, Germany. (No model.) No. 454,931. Serial No. 380,326. Filed Feb. 5, 1891.

SEPARATOR.—John H. Driller, Los Angeles, Cal. (No model.) No. 454,949. Serial No. 367,639. Filed Oct. 10, 1890.

BALING AND WEIGHING SCALE.—John S. Waters, U. S. Navy, assignor of one-third to Frank Emmett, New Orleans, La. (No model.) No. 454,953. Serial No. 367,307. Filed Oct. 7, 1890.

CAR MOVER.—Robert W. Drinker, Kilbourn City, Wis. (No model.) No. 455,035. Serial No. 380,619. Filed Feb. 7, 1891.

AUTOMATIC SCALE.—Friedrich C. Schmidt, Berlin, assignor to the Mühlenbauanstalt und Maschinenfabrik, vormals Gebrüder Seck, Dresden, Germany. (No model.) No. 455,120. Serial No. 379,812. Filed Jan. 31, 1891. Patented in Germany July 23, 1890. No. F 4,889, II 42.

BIN.—James Wilson, Liscard, England. (No model.) No. 455,082. Serial No. 296,727. Filed Jan. 18, 1889. Patented in England April 3, 1888, No. 5,074, and Oct. 4, 1888, No. 14,269.

GRAIN SCOURING APPARATUS.—Jullus Szawinsky and Stelian Grozea, Braila, Roumania. (No model.) No. 455,132. Serial No. 380,108. Filed Feb. 3, 1891.

BALING PRESS.—Byron A. Ferguson, Wright, Ottawa Co., Mich., assignor of one-half to Richard D. McNaughton. (No model.) No. 455,281. Serial No. 378,299. Filed Jan. 19, 1891.

TWO MONSTER MILLS.

From 200 barrels of flour per day produced in Nashville fifteen years ago, this line of business has increased to over 3,000 barrels per day, which amount will be nearly doubled within the present year, says the *Daily American* of Nashville, Tenn. So much complaint is being heard on all sides about the seeming stagnation in manufacturing enterprises that it is really refreshing to look upon the two splendid flour mills just completed in South Nashville, in which the milling machinery is now being placed.

A reporter called upon Mr. McCann and asked him for information regarding the new mill of the Model Mill Company. Mr. McCann replied that he had not a word for publication, as the directors of the company had decided not to make anything public until the mill is in running order. But from a glance at the beautiful structure, which can be seen from any quarter of the city on the Nashville, Chattanooga & St. Louis tracks near the old city cemetery, it is easily seen that the intentions of the company are on a grand scale.

In conversation with Mr. Kelly, president of the "Liberty Mills" at the foot of St. Cloud hill, the following facts were brought to light: The mills are the property of a stock company composed of some of Nashville's leading business men, together with prominent merchants all over the South, with a capital stock of \$100,000. The mill building proper is five stories high and 50x100 feet, to which is attached an engine and boiler room 71 feet long, and an elevator 32x96 feet, 75 feet high. The smokestack is made of brick, and lifts its crest 110 feet in the air.

The milling machinery is being put in by Nurdyke & Marmon Company of Indianapolis, Ind., one of the highest grade mill firms in the United States, and therefore in the world. The contract between the Liberty Mill Company and the Indianapolis firm calls for a finer and more complete mill than is now in existence. The millwrights of the firm are now placing this machinery in the newly completed building, and from the work already done it is evident that such an establishment is soon to be in operation in this city as has never been put up before.

The entire plant will be in operation by Aug. 1, with a capacity of 1,500 barrels per day. The stockholders of the concern are principally dealers, and the entire output of the mill will be disposed of without traveling salesmen, and without putting any of it in the hands of brokers. For a mill of this size eight men are usually kept on the road at an expense of something like \$30,000 per year. This expense will be saved by the "Liberty Mill."

The success of the venture is assured by what has already been done. Mr. Kelly was connected with the "Noel Mills" for twelve years, and was superintendent of the "American Mill" at the time of its purchase by the Union Mill Company. He is a man of much business sagacity and careful mill train-

ing. E. C. Andrews, secretary of the new company, has also had long training in the business.

For the birth and nourishment of these two enterprises, this year is especially favorable. The wheat crop will be large, a greater amount will be ground, and it is well that Nashville should broaden its scope in the milling line while the opportunity holds forth. She already stands ahead of Louisville, Cincinnati and Chicago in the number of barrels turned out per diem, and with these two additions there will be few cities in the country that can outrank her.

VALUABLE BOOKS FOR GRAIN DEALERS.

The following standard works will be sent, postage paid, on receipt of prices given:

ROBINSON'S TELEGRAPH CIPHER.—The publishers have recently revised this excellent work, and we are now prepared to supply the trade. Cloth binding, \$1.50; leather, \$2.00.

CLARK'S VEST POCKET GRAIN TABLES.—A very useful and handy little book for grain buyers; to be used in reducing to bushels any quantity of grain or seeds up to 100,000 bushels. Size 2½ by 8½ inches, 16 pages. Leatherette, 75 cents. Leather binding, \$1.00.

SHOFFELL'S MODERN HOUSES.—This large volume contains designs for more than four hundred and fifty dwellings, including cost, size of structure and size of rooms, materials, height of stories, and is illustrated with 1,500 engravings. Printed on good paper and well bound in cloth. Price, \$5.00.

GRAIN DEALERS' AND SHIPPERS' GAZETTEER.—A new publication containing the grain inspection rules for the states of Illinois, Wisconsin, Minnesota, Michigan, Ohio and Missouri, and a complete list of the names of grain dealers and shippers on twenty-five railroads which penetrate the principal grain growing territory of the country. The names were collected recently by the aid of the railroad companies, so the names of no retired firms are given, making it reliable and by far the best book of the kind published. It is well bound and contains 370 pages. Price, \$5.00.

CLARK'S GRAIN TABLES.—This work is published in several different forms, for use in different lines of business. In these tables pounds are reduced to bushels so that a buyer can quickly determine the correct number of bushels in a load without doing any figuring. Their use effects a saving every day of more than time enough to pay for them. The edition intended principally for reducing team scale weights to bushels contains nine tables, and is bound in paper. Price 50 cents. This will be found invaluable to country buyers. A new edition, intended for shippers and commission merchants, reduces any quantity up to 64,000 pounds to bushels. It contains sixteen tables, and is neatly bound in leatherette. Price, \$1.50.

CLARK'S DECIMAL GRAIN VALUES.—A series of tables for instantly finding the cost of any number of pounds at any possible market value per bushel, also reducing pounds to bushels on the same page. It is the design of this work to show at a glance, or with the simplest calculation, the cost of any quantity of grain. The method adopted is the result of careful study and is a novel and original combination of decimals in type of differing faces, by which the great number of calculations necessarily involved are presented in a clear, concise and comprehensive manner. Values are shown directly from pounds, without reducing to bushels, while for convenience, where it is necessary or desirable to indicate the quantity by measure, the equivalent bushels and pounds are shown upon each page. The range of prices covered by the tables is for oats 10 to 70 cents per bushel; for corn, rye and flaxseed 10 to \$1.10; for wheat 3 to \$1.50, and for barley 20 to \$1.50. The book contains 90 pages, is well printed, and bound in half morocco. Price, \$10.00.

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Three No. 8 Excelsior Oat Clippers in good repair. Address

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I have for sale the following machines in good order: One Clutch; one No. 2½ Barnard & Leas Separator; one No. O Band and one No. G Nonpareil Feed Mills; one No. 2 Magic Feed Mill; one No. New 4½ Scientific Feed Mill; one No. 2 Morgan Scourer; one 4-in. Crown Water Meter; two 5 ft. by 32 in. hexagon scalping reels, and one double 6 ft. 6 in. by 30 in. hexagon scalping reel, etc. Address

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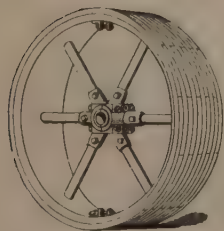
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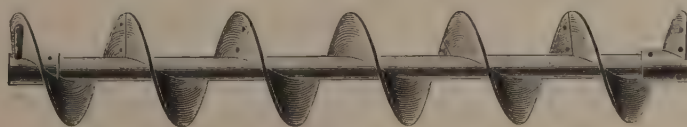
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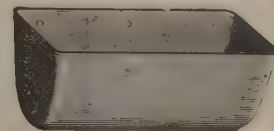
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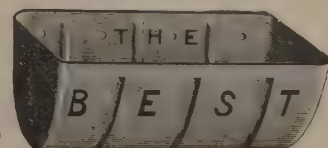
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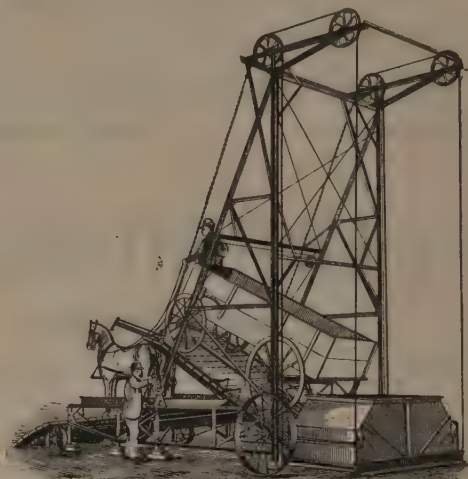
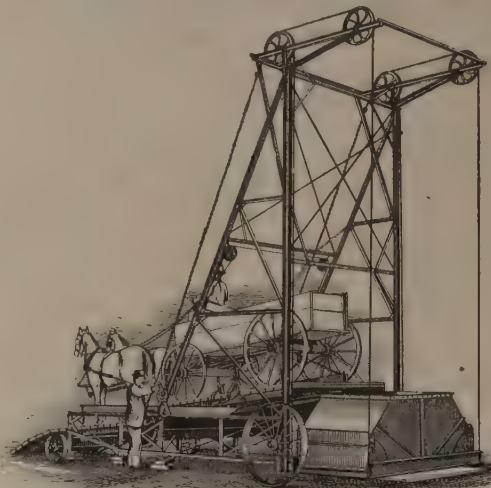
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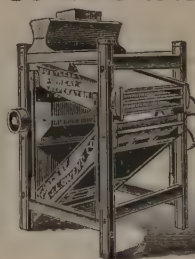
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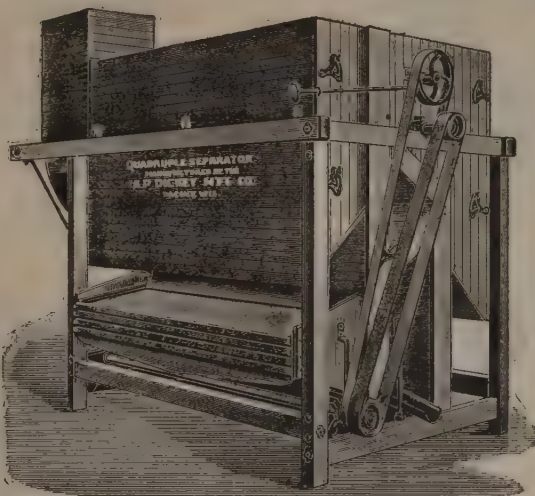
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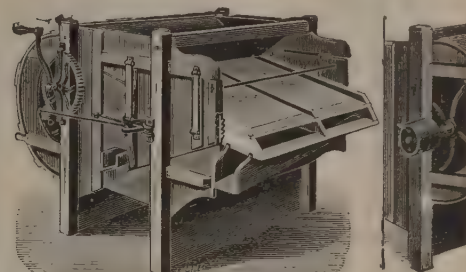
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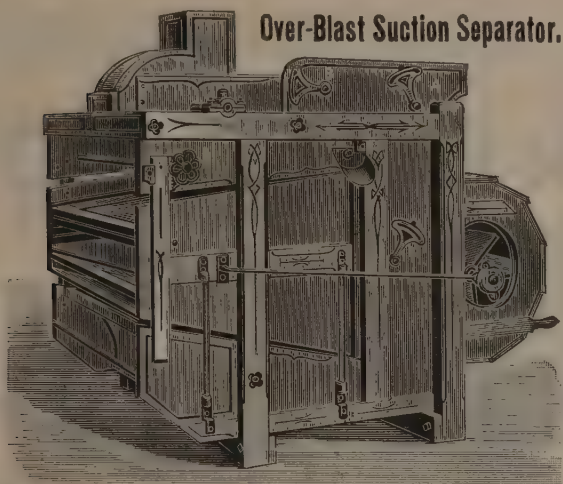
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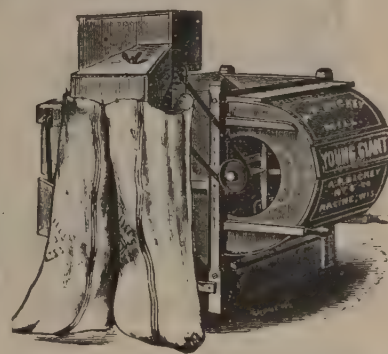
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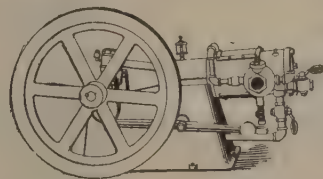
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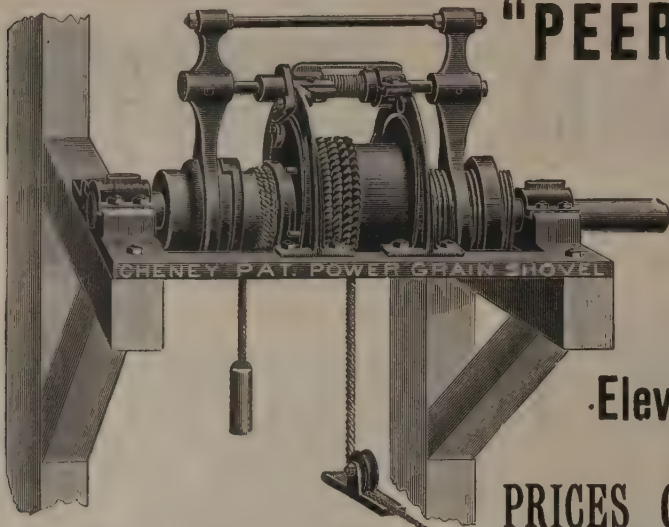
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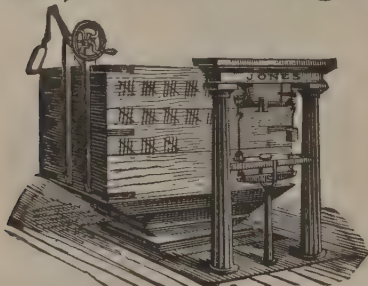
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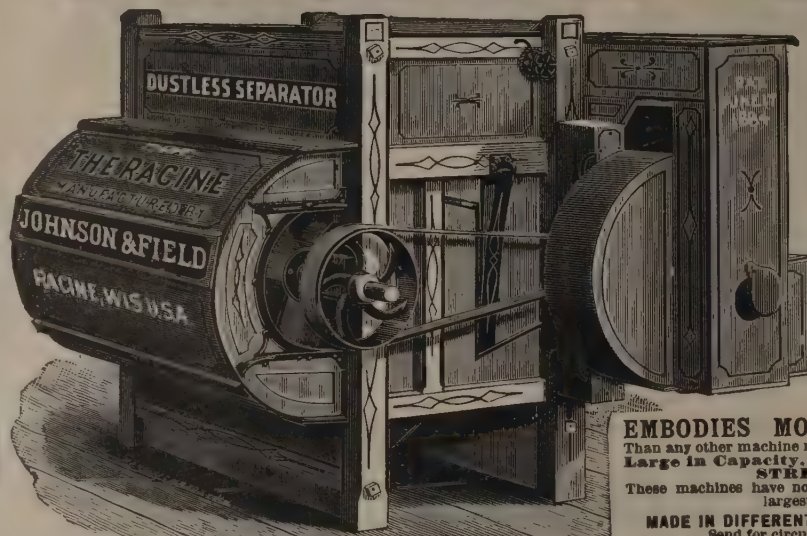
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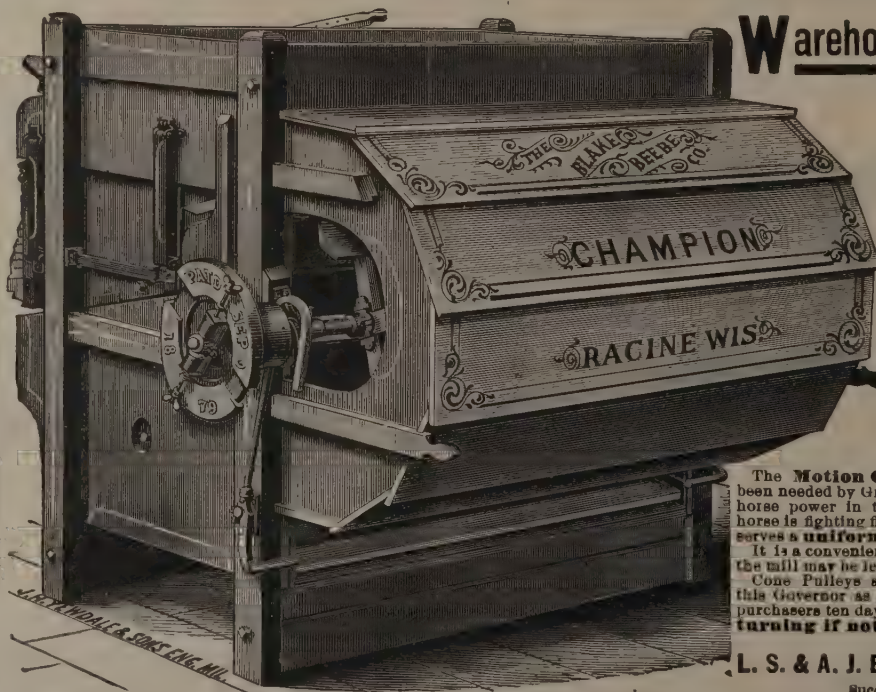


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MR. J. B. DUTTON, Detroit, Mich.

DEAR SIR:—In March, 1889, I purchased from you three of your Automatic Scales, one No. 4 and one No. 6 grain, and one feed scale. These have been in constant use since that time, and work as accurately now as they did the day we set them up. As yet they show no signs of wear. We are well pleased with the scales, and can recommend them as accurate and durable.

Yours truly, WILLIAM BLODGETT.

GRAND RAPIDS, MICH., Feb. 28, 1891.

J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—The Automatic Grain Scale that you sent us, more than meets our expectations as a scale. We are using it for the purpose of weighing beans from cars. We have weighed something like 40,000 bu. in the past three months, and have yet to find the time when it did not do its work correctly.

Its being automatic makes its own register, requires no attention whatever, and we cheerfully recommend it to the public as the scale for warehouses and elevators.

Very respectfully,
W. T. LAMOREAUX & CO.

DELAVER, ILL., March 7, 1891.

MR. J. B. DUTTON Detroit, Mich.

DEAR SIR:—We have been running one of your Automatic Grain Scales for the past 6 months and find they work and weigh grain correctly. We weigh the grain from the stock hopper to the rolls, thereby enabling us to know how much cleaned wheat it takes for a barrel of flour. We can recommend them to all millers.

Yours truly, F. STARZ & SON.

SAGINAW, MICH., March 6, 1891.

J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—Replying to yours of the 4th will say that the Automatic Grain Scale we bought of you has been in almost constant use for over a year, and we find by frequent tests that they are very correct and reliable in ascertaining the amount of wheat ground each day.

Yours truly, BRAND & HARDIN.

DULUTH, MINN., March 20, 1891.

J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—Replying to yours of the 18th, regarding your Automatic Scales, will say, that we have been using them in our mills and they have given perfect satisfaction.

We have made frequent thorough tests, and find that they are very accurate in weighing yields and percentages they are indispensable.

Respectfully yours, GILL & WRIGHT.

ELDRIDGE MILLING CO.

JACKSON, MICH., April 3, 1889.

J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—Replying to your favor of the 2d regarding your Automatic Scales which we are using on feed in our mills, am pleased to say that they are entirely satisfactory in every respect. We have tested them a great many times and find that they weigh very correctly. In matters of yields and percentages they are indispensable.

Wishing you every success with them, we are,
Yours truly, ELDRIDGE MILLING CO.

WALLA WALLA, WASH., March 9, 1891.

J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—Replying to your favor of March 4, will say, the new Automatic Scale you sent us last fall has since been in constant use, and works to our entire satisfaction.

Yours truly, H. P. ISAACS, Manager.

THE ISAAC HARTER CO.,

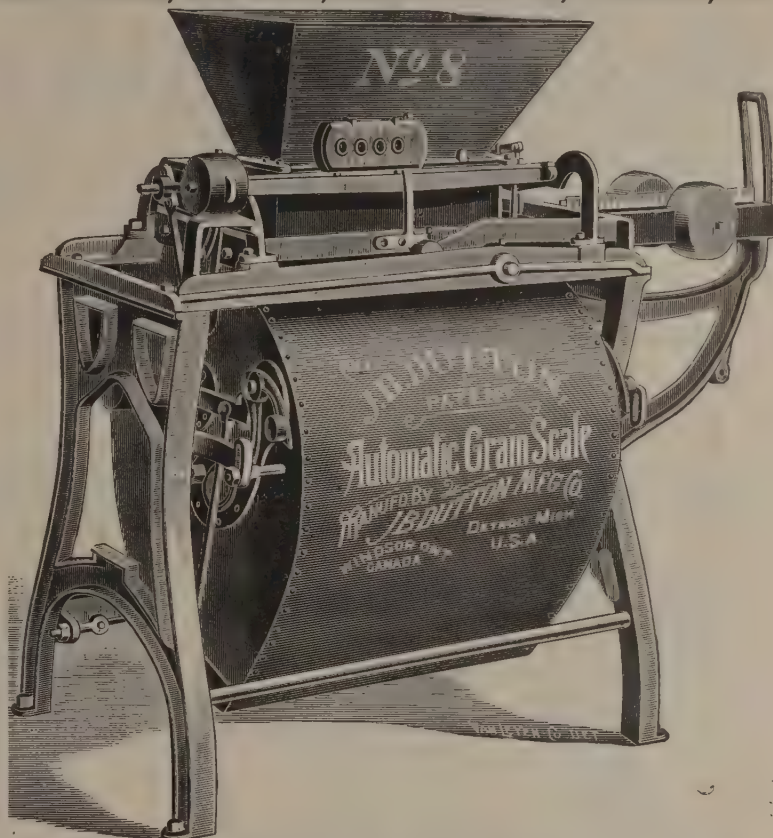
POSTORIA, OHIO, June 19, 1889.

J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—The new register you sent us at the beginning of the year has been in constant use and works to our entire satisfaction.

As regards another testimonial, can only say that your Automatic Scale has been in operation in our mill for over a year, weighing all the feed we made during that time. Its correctness is no longer a question of doubt with us, having tested it both by grinding out all the wheat on hand, and by taking frequent drafts which, on Fairbanks or Howe Scales, show 100 pounds to each dump, the regular weight of each discharge from your No. 5 scale.

Yours truly,
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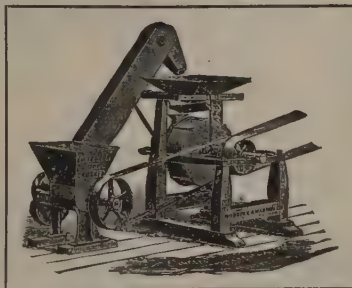
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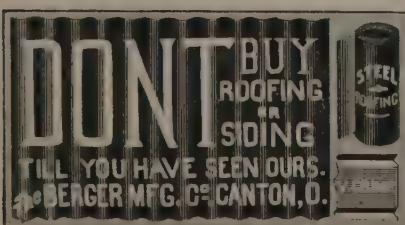
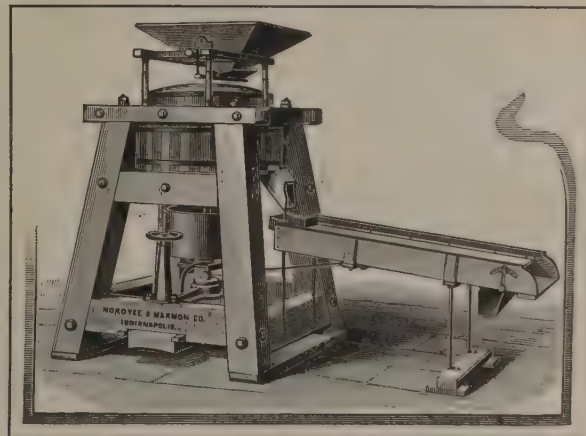
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BUY OUR LOW PRICED COUNTRY GRAIN ELEVATORS.

Send \$20.00 for working plans of a 5,000-bushel Grain Elevator costing \$1,000.00, complete with power and machinery, warranted to handle grain faster and cheaper than any other known device. Also, larger sizes the same ratio in price. Catalogue, with plans and full prices of machinery, sent upon application.

ADDRESS

NORDYKE & MARMON CO., - Indianapolis, Ind.



Subscribe for the AMERICAN ELEVATOR AND GRAIN TRADE and the AMERICAN MILLER; both one year \$1.50. Address MITCHELL BROS. CO., Chicago.



Elevator and Mill Supplies
Leather, Cotton, Rubber

BELTING

Elevator Buckets, Bolts, Mill Irons, Etc.
Prices Close, and Quality the Best.

THE CASE MFG. CO., Columbus, O.

BUY the Leaser Patent Self Operating Grain Cleaner



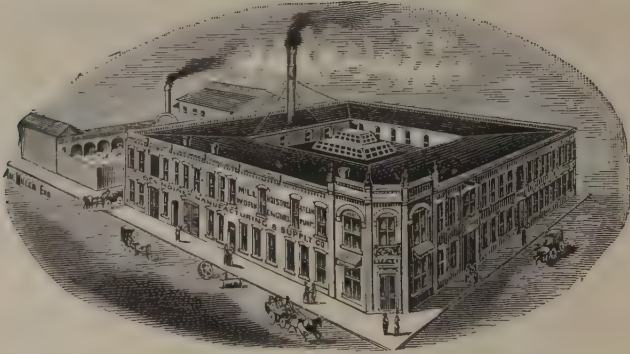
Operated by the weight of the grain. It will clean three times as fast as a fanning mill, and can be adjusted while in motion, to clean as good as desired. It need not be touched except to dump in grain. Five sieves go with each cleaner, to clean any kind of grain. Floor space 30x40 inches, five feet high. This is a farmer's size, but is especially adapted to warehouses. Price, \$20.00. I will make any size required.

Warehousemen will do well to buy one to sell to farmers as I will give exclusive right to only one man at each station to sell. Warehousemen will please paste this up in warehouse where farmers can see it. Send for descriptive circular and references.
JOSEPH LEASER, Patentee and Manufacturer, Dumont, Minn.

DES MOINES MANUFACTURING & SUPPLY CO.,

MANUFACTURERS AND DEALERS IN ALL KINDS OF

ELEVATOR MACHINERY & SUPPLIES!



ENGINES AND BOILERS,

Iron Pipe Fittings and Brass Goods, Pulleys, Shafting, Elevator Buckets and Gears.

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Estimates Furnished for Complete Plants.

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WANTED.

THE RACINE OIL BURNING ENGINE.

FOR ELEVATORS.

We make THE ONLY OIL BURNING BOILER in the world that will permit the use of other fuel in connection with the oil.

Automatic Water and Oil Regulation.

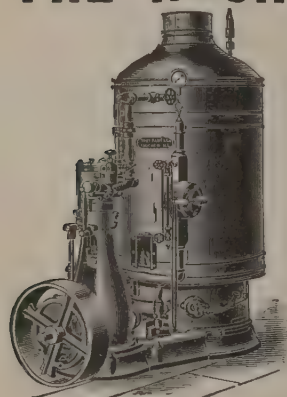
OUTFITS UP TO 10 H. P.

AUTOMATIC ENGINES

FROM ONE TO NINETY HORSE POWER.

For prices and other information, address

The Racine Hardware Manufacturing Company, Racine, Wis.



JEROME TWICHELL & CO., KANSAS CITY, MO.

CORRUGATED IRON,

Fire Proof, Lightning Proof, Cheap as Lumber.

Wire Fencing, Metal Shingles, Building Paper, Etc.

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HENRIETTA, TEXAS.

Offers well selected, guaranteed First Mortgages, 5 years, 8 per cent.

On productive central business property, in good North Texas towns. Interest semi-annual; safe and profitable investment in finest agriculture. State in the Union. Refer to Southern National Bank, New York; Etna National Bank, Hartford, Conn.; Mercantile Trust Co., Providence, R. I., &c.

WESTINGHOUSE ENGINES

USED BY THE FOLLOWING GOVERNMENTS:

UNITED STATES.

U. S. Torpedo Station, Newport, R. I., 43 H. P.
U. S. Army Department, San Antonio, Tex., 50 H. P.
U. S. Engineer Corps, St. Louis, Mo., 8 H. P.
U. S. Military Post, Fort Canby, Wash., 4 H. P.
U. S. Government Quartermaster Department, Vancouver, Wash., 62 H. P.
U. S. Government Quartermaster Department, New Orleans, La., 15 H. P.
U. S. Senate, Washington, D. C., 150 H. P.
U. S. House of Representatives, Washington, D. C., 75 H. P.
U. S. Government Ice Factory, San Antonio, Tex., 4 H. P.
U. S. Navy Yard, Norfolk, Va., 125 H. P.
U. S. Navy Yard, Brooklyn, N. Y., 125 H. P.
U. S. Government, Ellis Island, N. Y., 120 H. P.
U. S. Dispatch Boat "Lucerne," Norfolk, Va., 50 H. P.
Washington Monument, Washington, D. C., 25 H. P.
MEXICAN: State of Guerrero, 15 H. P.
JAPANESE: In Government Coal Mines, 150 H. P.
HOLLAND: Government Physical Laboratory of Leiden, 15 H. P.
RUSSIAN: Moscow Imperial Technical School, 10 H. P.
NEW SOUTH WALES: Government of New South Wales, 160 H. P.
TASMANIAN: Alexandria Battery, Hobart, 75 H. P.
ENGLISH: Number unknown. Details not reported. Over 30 engines.

Many others sold by agents, but not reported.

THE WESTINGHOUSE MACHINE COMPANY.
PITTSBURGH, PENNA. U.S. OF A.

THE BEST & CHEAPEST

BELTING

IN THE WORLD

STITCHED CANVAS BELTING

MANUFACTURED BY
THE CHESAPEAKE BELTING CO.
BALTIMORE, MD.

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THE SEELEY ELEVATOR.

SELEY, SON & CO.
FREMONT, NEB.

ELEVATOR BUILDERS THE SEELEY ELEVATOR

Stands at the head for Convenience and Economy of Operation.

You cannot build a first-class modern elevator without using some of our inventions, so you had better apply to us for plans and specifications and save royalties. A large number of persons are using our appliances and may expect us to call on them for royalties in the near future.

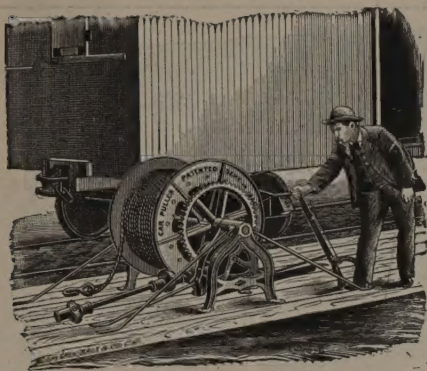
Also furnish all kinds of Machinery, Engines, Cleaners, Corn Shellers, Belts and Buckets, etc., etc.

We build Elevators in all parts of the United States and Canada.

With our experience, we can save you on these items more than cost of Plans. Correspond with us, and save costly mistakes.



POWER CAR PULLERS

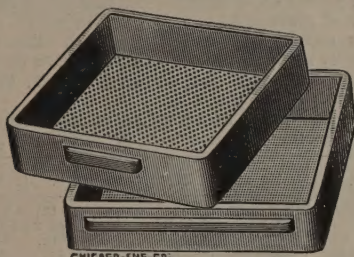


THE W. G. ADAMS POWER CAR PULLER.

COMPACT, STRONG, CHEAP.

Can be set at any angle with Driving Shaft or Rail Road Track.

HANDLES From 1 to 3 loaded cars at once, according to the conditions of the track.



CHICAGO-ENG. CO.

GRAIN AND SEED TESTER.

The upper box fits into the lower one. The zincs or wire cloth, as the case may be, are of different perforations, or meshes, according to the work required to do. When ordering, simply state what the Testers are to be used for, whether for grain or for fine seeds, and what kind, as separate Testers are required for each. A Tester includes a pair (both sieves).

FOR HANDLING CARS

—AT—

**Factories,
Coal Mines,
Warehouses,
Grain Elevators,
Mills,
Malt Houses,
Breweries**

—AND—

Distilleries,

Or wherever necessary to move cars without a Switch Engine. Can be set at any angle with Railroad Track.

We are Makers and Jobbers of all kinds of

MACHINERY and SUPPLIES

—FOR—

GRAIN ELEVATORS and MILLS

SUCH AS

SHAFTING, PULLEYS, HANGERS,
PILLOW-BLOCKS, CLUTCHES, COUPLINGS,
GEARS, SPROCKETS, SET COLLARS,
TAKE-UP BOXES, CRANE-SPOUTS,
LEATHER, RUBBER, COTTON AND LINK BELTING.
"FLEXIBLE" AND "SWIVEL" GRAIN SPOUTS.
ELEVATOR BOOTS, BUCKETS AND BOLTS.
"SPIRAL" AND "BELT" CONVEYORS.
"PLATFORM," "DUMP" AND "HOPPER" SCALES.
GRAIN SCOOPS, AND POWER GRAIN SHOVELS.

—ALL SIZES OF—

**Farm and Warehouse Fanning Mills,
Grain Testers, SEED TESTERS,
PERFORATED METALS, WIRE CLOTH,**

**Power Car Pullers, Oat Clippers, Dust-
less Receiving Separators,
Polishers, Separators, Graders,**

FLAX REELS AND SPECIAL FLAX MILLS,
"OVERHEAD," "SWEEP" AND "TREAD" HORSE POWERS.
BAG-TRUCKS, SIX-WHEEL WAREHOUSE TRUCKS.

—AND—



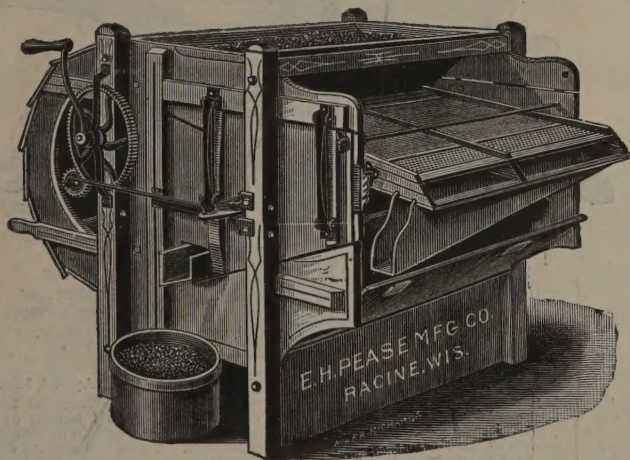
"HERCULES" POWER CAR PULLER.

FOR HEAVY WORK. IN USE BY

Columbia El. Co. Chicago—1 machine.
Wright & Hill, Linseed Oil Works. Chicago—1 machine.
J. A. McLennan, (El. Contr' & Builder), Chicago—11 machines.
W. L. Luce's Elevator So. Elmhurst, Ill.—1 machine.
H. Mueller & Co. Chicago—1 machine.
Soo R'y Co.'s El. Gladstone, Mich.—1 machine.
P. & W. R'y Co.'s El. Painesville, Ohio—2 machines.
A. T. & S. R'y Co.'s El. Kansas City, Mo.—2 machines.
Barnett & Record, Minneapolis, Minn.—10 machines.
El. Contr' & Builders
Watrous Engine Works. Winnipeg, Man.—1 machine.
C. A. Pillsbury & Co. Minneapolis, Minn.—1 machine.
Interior El. Co. Minneapolis, Minn.—2 machines.
City El. Co. Minneapolis, Minn.—1 machine.
St. Anthony El. Co. Minneapolis, Minn.—2 machines.
S. S. Cargill's El. Minneapolis, Minn.—1 machine.
D. A. Martin's El. Minneapolis, Minn.—1 machine.
Millington W. Sand Co. Millington, Ill.—1 machine.
Hogan & Neilson Seneca, Ill.—1 machine.

—AND MANY OTHERS.

SPECIAL FLAX CLEANING MACHINERY.



THE "PEASE" SPECIAL FLAX MILL.

FOR HAND USE OR POWER.

This Mill is represented with a Grain Hurdle in the Shoe, to show that although especially adapted to Flax-Seed Cleaning, it can also be used for all kinds of Grain, making it a universal mill, calculated for all kinds of work. This mill is built upon the same principle as our Side Shake Warehouse Mills, but with more depth of the shoe, in order to accommodate deeper Sieves and a flax screen extending to the extreme front of the mill, a length of four feet. It consequently has greater capacity than any ordinary mill in existence. No flax hurdles are used, as separate sieves work better on flaxseed, and afford opportunities for changing the combinations for different classes of work. This mill is equally well adapted to cleaning, separating and screening Timothy, Clover, and other fine seeds.

NOTE—The No. 0 and No. 00 machines are not fitted to run by hand power.

	No. 2.	No. 1.	No. 0.	No. 00.
Extreme Height.	3 ft. 8 in.	3 ft. 8 in.	3 ft. 8 in.	3 ft. 8 in.
Size over all....	5 ft. 7 in. x 4 ft.	5 ft. 7 in. x 4 ft.	5 ft. 7 in. x 5 ft.	5 ft. 7 in. x 6 ft.
Fl to cen. of pulley	27 in.	27 in.	27 in.	27 in.
Driving pulleys.	6 in. x 2 in.	6 in. x 2 in.	6 in. x 3 in.	6 in. x 3 in.
Rev. per minute.	275	275	275	275
Size of Sieves...	3 ft. 2 in. x 33 in.	4 ft. x 33 in.	5 ft. x 33 in.	6 ft. x 33 in.
Depth of Screw.	4 ft.	4 ft.	4 ft.	4 ft.
Capacity per h'r.	25 to 35 bu.	35 to 45 bu.	45 to 60 bu.	60 to 75 bu.

STRAIGHT OR TAPERED
HAND REELS OF ANY DIMENSIONS
DESIRED, MADE TO ORDER.



Two feet of capacity length for each lineal foot of machine.

Tapered, Hexagon Reels, Revolving on Horizontal Shafts.

All Sprocket Wheels and Drive Chain run perpendicular and Parallel with each other.

The lightest running, best made, most durable reels in the market.

—MACHINES RECENTLY SOLD TO—

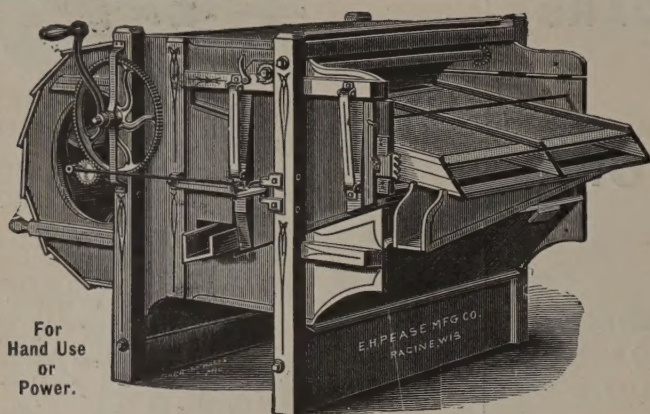
The Albert Dickinson Seed Co. Chicago.
W. C. Luce So. Elmhurst, Ill., (4 machines).
Cargill Bros. La Crosse, Wis.
Inter-State Grain Co. Oelwein, Ia.
McMichael & Son. McGregor, Ia.
J. C. Sanborn & Son. Ortonville, Minn.
Boor & Benjamin. Ashton, Ia.
Clark Bros. Manson, Ia.
D. C. Fairbanks. Dodge Center, Minn.
Clausen Bros. Cedar Lake, Ia.

AND MANY OTHERS.

E. H. PEASE MFG. CO., RACINE, WIS., U. S. A.

SEE PAGES 34, 35 AND SECOND COVER PAGE.

PEASE WAREHOUSE FANNING MILLS.



The "Pease" Side Shake Mills.

The Cut shows the "Right," or Crank side. On the opposite side are tight and loose Pulleys. These mills are not only a first-class mill for general work but are also specially adapted for all kinds of seed cleaning as is attested by the following unsolicited letter, which we publish by permission:

E. H. PEASE MFG. CO., Racine, Wis.:

Gentlemen:—We have started the No. 2 Mill which we bought from you a short time ago. We find it to be the best Timothy Cleaner we ever saw. It cleans very fast and does fine work. It is far ahead of the — mill for cleaning timothy. We also use a — mill but it does not come up with the No. 2 side shake we bought of you. Your No. 2 will clean timothy about three times as fast as the — mill does and does better work than the — does. Your mill is well built and strong. We would not give our No. 2 "Pease" Side Shake for any two — that we ever saw.

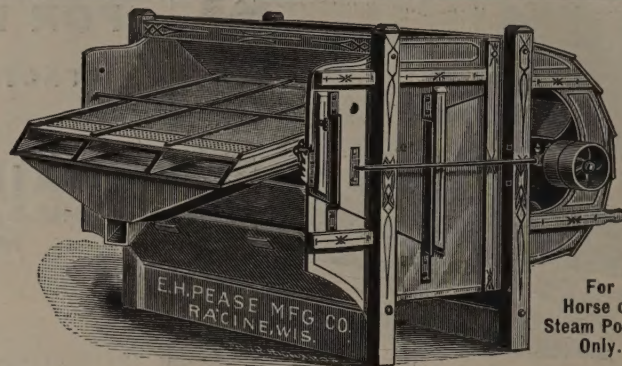
Very truly,
J. B. ZECHES & CO.

NOTE—The No. 0 machine is not fitted to run by hand power.

	No. 3.	No. 2.	No. 1.	No. 0.
Extreme Height.....	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.
Size over all.....	5 ft 2 in x 3 ft 4 in	5 ft. 2 in. x 4 ft.	5 ft 2 in x 4 ft 9 in	5 ft 2 in x 5 ft 9 in
Floor to center of pulley.....	25½ in.	25½ in.	25½ in.	25½ in.
Driving pulley.....	6 in. x 2 in.	6 in. x 2 in.	6 in. x 2 in.	6 in. x 3 in.
Revolutions per minute.....	275	275	275	275
Size of hurdles.....	2 ft. 6 in. x 24 in.	3 ft. 2 in. x 24 in.	4 ft. x 24 in.	5 ft. x 24 in.
Capacity per hour.....	10½ to 200 bu.	125 to 200 bu.	175 to 350 bu.	250 to 450 bu.

HAVE
THE
LARGEST
SALES

OF
ANY
MADE
IN
THE
UNITED
STATES



The "Pease" End Shake Mills.

Particularly adapted for use in Horse Power Elevators where power is limited and close cleaning and grading desired. It is strong, durable and noiseless.

The shoe is supported by STEEL springs, hung from above and vibrated by flexible shake-rods with ADJUSTABLE ECCENTRICS. The shake is from front to back, instead of from side to side.

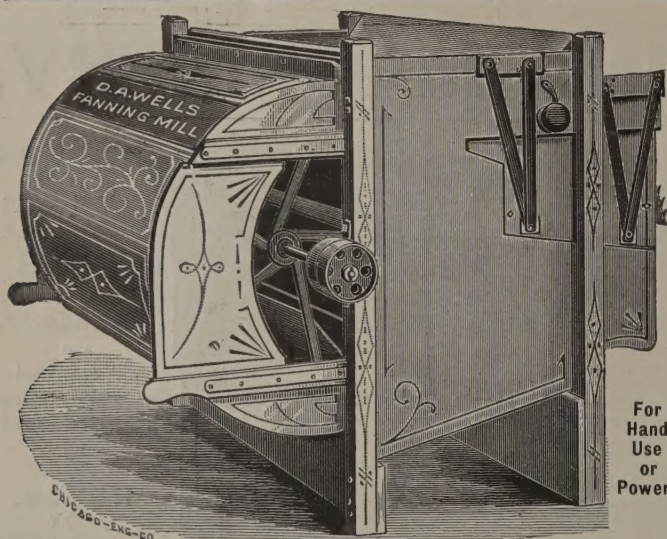
They are fitted with a patent adjustable hopper raiser, not shown in cut, which gives an even flow of grain upon the sieves.

These Mills have MUCH GREATER CAPACITY than any other kind of equal sizes. They are especially adapted for cleaning ALL KINDS OF GRAIN. The side shake Mills are better adapted for cleaning Clover, Timothy, Flax, etc.

NOTE—The pulleys are placed on the RIGHT side of mills or opposite to those showing in this cut, unless otherwise ordered.

	No. 3.	No. 2.	No. 1.	No. 0.	No. 00.
Extreme Height.....	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.
Size over all.....	5 ft. 9 in. x 3 ft. 8 in.	5 ft. 9 in. x 3 ft. 11 in.	5 ft. 9 in. x 4 ft. 8 in.	5 ft. 9 in. x 5 ft. 8 in.	5 ft. 9 in. x 5 ft. 8 in.
Floor to center of pulley.....	25½ in.	25½ in.	25½ in.	25½ in.	25½ in.
Driving pulleys.....	6 in. x 2 in.	6 in. x 2 in.	6 in. x 2 in.	6 in. x 3 in.	6 in. x 3 in.
Revolutions per minute.....	450	450	450	450	450
Size of hurdle.....	2 ft. 6 in. x 30 in.	3 ft. 2 in. x 30 in.	4 ft. x 30 in.	5 ft. x 30 in.	6 ft. x 30 in.
Capacity per hour.....	125 to 250 bu.	150 to 300 bu.	200 to 400 bu.	250 to 500 bu.	300 to 600 bu.

THESE MACHINES CAN BE FURNISHED WITH SPECIAL SIEVING TO HANDLE ANY KIND OF GRAIN OR SEEDS.



The "D. A. Wells" Warehouse Fanning Mill.

Designed for locations where power is limited and rapid cleaning is more of an object than close grading.

They have a much larger capacity than our "Pease" Warehouse Mills, but having a larger fan, do not require as high a motion and consequently require less power.

These mills are famous as corn and oat cleaners, where plain elevator work is required, and to be done rapidly.

The sieves are so arranged that they may be put in place or taken out independently, thus enabling the operator to quickly arrange any combination that may be required for the various kinds or conditions of grain to be cleaned.

Extreme height.	Size over all.	Floor to center of pulley.	Driving pulleys.	Rev. per minute.	Size of sieves.	Capacity per hour on corn or oats.	Weight.
4 ft. 1 in.	5 ft 6 in x 2 ft. 3 in. 6 ft.	2 ft. 8 in.	6 in x 2 in	140	57 in. x 26 in.	800 to 1,000 bu.	425 lbs.

Office of
WM. DEACON.

E. H. PEASE MFG. CO., Racine, Wis.:

Gentlemen:—Replying to yours of recent date, in which you inquire whether my old "D. W. Wells" Fanning Mill is not about worn out and if I will not require another one this season, would say:—The small piece of casting I ordered from you a few days ago to repair same, has put my mill in perfect order, with no reason in sight why it will not be running at the end of time and doing perfect work. This machine was in the Elevator when I took possession THREE years ago, and I am reliably informed has been in almost constant use here for FIFTEEN years previous to that time.

Very truly yours,

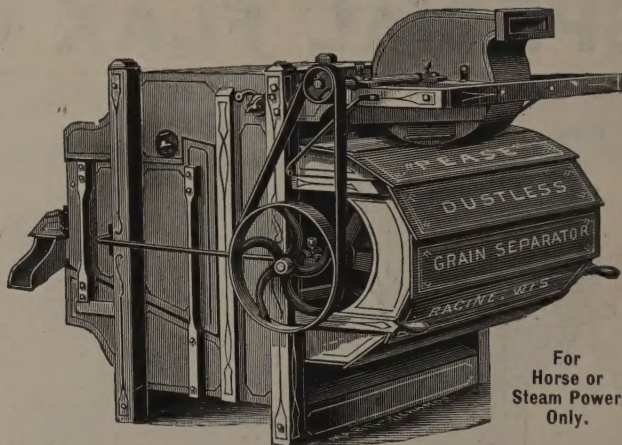
WM. DEACON.

GRAIN AND SEEDS,
SANDWICH, ILL., May 23, 1890.

WE
ARE
HEADQUARTERS
FOR
ALL KINDS
OF
MOTIVE POWER
MACHINERY,
FITTINGS,
SUPPLIES AND
REPAIRS
FOR
GRAIN
ELEVATORS
AND
MILLS.

—O—
SEND FOR
GENERAL
CATALOGUE
AND PRICES
—TO—

The "Pease" Dustless Separators.



CHICAGO, ILL., April 8, 1891.

GENTLEMEN:—The "Pease" Dustless Separator I bought of you March 26, 1891, I sold to Wittman & Co., 66 and 68 N. Halsted St. The No. 00 Machine I bought of you January 19, 1891, I sold to F. Grimsell, 80 W. Erie St. and one I bought of you some time ago I sold to Keifer Bros., North Ave. and Halsted St. These and several others of these "Pease" Dustless Separators I have bought of you are being used chiefly for cleaning corn and oats, and any of them will clean as fast as 8x5-inch buckets, placed 12 inches apart and running at the usual speed, can elevate.

All the machines are giving good satisfaction.

Yours, etc.,

R. D. HILDRETH, Millwright,
53 and 55 So. Jefferson St.

SPIRIT LAKE, IOWA, May 7, 1891.

GENTLEMEN:—Inclosed find draft to pay for the No. 00 "Pease" Dustless Separator just received from you to take the place of the — Separator. Day before yesterday we put the mill in place and have been running it on some odd jobs, and the Separator works to our entire satisfaction. The Dustless Fan and Conductor works splendidly, carrying out everything I want it to, and I can put the suction on strong enough to take out grain if I desired. I can regulate the machine just as I want to, and am just more than pleased with it.

Yours truly,

D. L. RILEY.

	No. 3.	No. 2.	No. 1.	No. 0.	No. 00.
Extreme height.....	5 ft. 2 in.	5 ft. 2 in.	5 ft. 2 in.	5 ft. 3 in.	5 ft. 3 in.
Size over all.....	5 ft 9 in x 3 ft 10 in.	5 ft 9 in x 4 ft 6 in.	5 ft 9 in x 5 ft 3 in.	5 ft 9 in x 6 ft 3 in.	5 ft 9 in x 7 ft 3 in.
Height to where grain enters.....	4 ft. 3 in.	4 ft. 3 in.	4 ft. 3 in.	4 ft. 3 in.	4 ft. 3 in.
Floor to center of pulley.....	2 ft. 3 in.	2 ft. 3 in.	2 ft. 3 in.	2 ft. 3 in.	2 ft. 3 in.
Driving pulleys.....	6 in. x 3 in.	6 in. x 3 in.	6 in. x 3 in.	6 in. x 4 in.	6 in. x 4 in.
Rev. per minute.....	450	450	450	450	450
Size of hurdles.....	2 ft. 6 in. x 30 in.	3 ft. 2 in. x 30 in.	4 ft. x 30 in.	5 ft. x 30 in.	6 ft. x 30 in.
Capacity per hour.....	125 to 250 bu.	150 to 300 bu.	200 to 400 bu.	250 to 400 bu.	300 to 600 bu.

E. H. PEASE MFG. CO., RACINE, WIS., U.S.A.

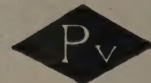
SEE PAGES 33, 35 AND SECOND COVER PAGE.

THE MONITOR GRAIN CLEANERS

✦ ✦ ✦

The Superiority of these Machines over all others is best demonstrated by the evidence of those who are using them.

THE MIDLAND ELEVATOR CO.



Dictated.

Kansas City, Mo., Feb. 10, 1891.

Messrs. Huntley, Cranson & Hammond,

Silver Creek, N.Y.

Gentlemen,-

Your Separators, which during the past summer you put into our million and half million elevators at this point, are giving excellent satisfaction, and our superintendent, who has had long experience in the elevator business, states to us that they are the best Separators he has ever operated.

We have four No.8 Warehouse Separators in the Union Pacific Elevator, and six No.8 Separators in the Santa Fe Elevator.

We simply add to this, as a recommendation, that when we are in need of more, we shall not look further than your Company.

Yours truly,

The Midland Elevator Co.

Chas. J. Rye

Pres.

A complete line of these machines can be seen and full information obtained at our Western Branch, 63 and 65 South Canal Street, Chicago, Ill.

HUNTLEY, CRANSON & HAMMOND

Write for Circular, Prices, Etc.

SILVER CREEK, N. Y., U. S. A.

B. F. RYER, { 63-65 SOUTH CANAL ST. } Chicago, Ill. HENRY SIMON, { 20 Mount Street, MANCHESTER, ENG.,
Manager Western Branch. } GENERAL AGENT FOR EUROPE.